

CTO

The Magazine for Information Executives

R. Steve Edmonson,
CIO and VP of
R.P. Scherer

African
Americans
hold less
than 3% of
the top jobs in
this country

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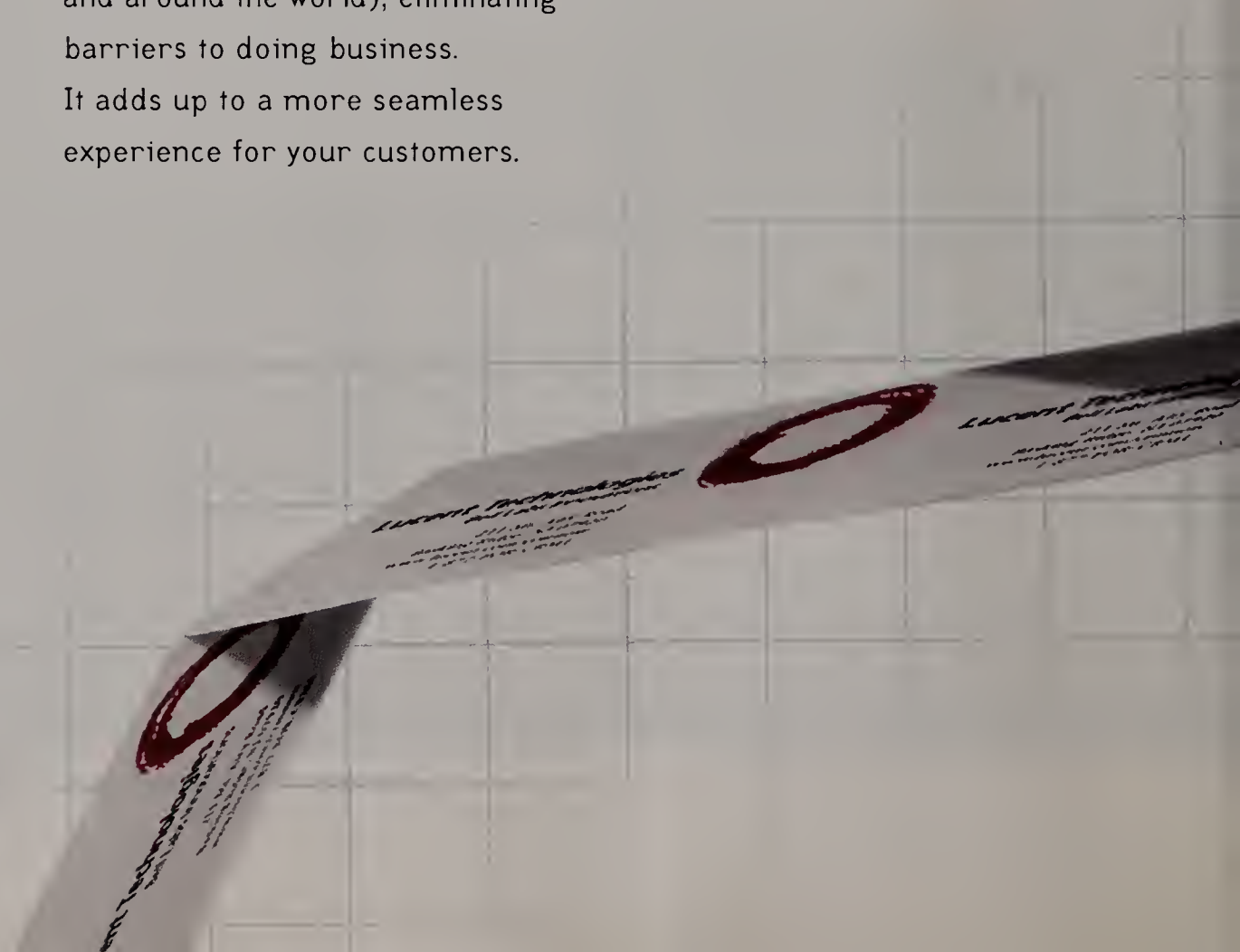
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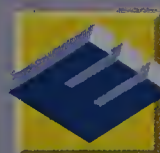
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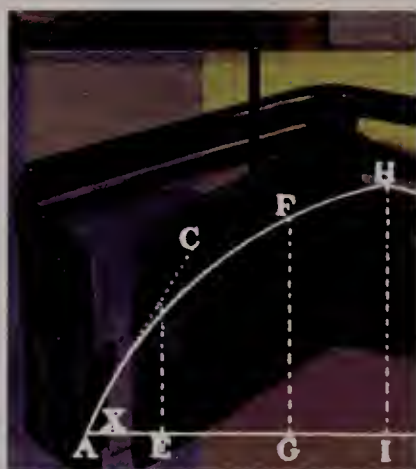
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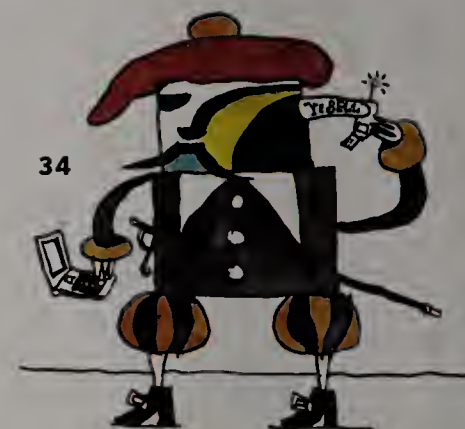
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“Now that we have an Internet tax moratorium, now that we have addressed the Y2K liability problem, the issue of encryption is probably the greatest challenge to the high-tech industry.”

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From the Editor

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New and Improved

Twelve years ago, when we started this magazine, CIOs were a rare and somewhat beleaguered breed. Our mission as “the magazine for information executives” was to champion the cause and help our readers emerge from the darkness of back-office data processing into the world of business enlightenment. We believed passionately in the importance of the CIO role and knew how tenuous the position of these poor bastards really was.

My, how times have changed. Today CIOs are at the center of an economic and social transformation. The stakes are high, and no one knows that better than the men and women leading IT.

We’ve changed too. For the past seven months, we’ve been rethinking and redesigning the magazine to reflect this new reality. Our mission now is to help shorten the cycle time for high-risk decisions. We’ll do this in part by taking a stand on the issues that matter most. We hope you will find this to be a more relevant and exciting publication targeted directly to you. Here are some changes you’ll find:

- More feature stories, with a better mix of article topics, lengths and formats
- Less cheerleading in favor of realism, insight and analysis



- More opinion, including a dedicated six-page section at the back of the book
- More soul; check out the Difference Engine column on Page 142
- Plenty of CIO voices, including CIO Confidential in this issue and Platform in the next
- Good advice: Our new Virtual Mentor series premieres on Page 98. Career Counsel, on Page 68, develops on our Web site and is distilled for you in print.
- An expanded Trendlines section, with regular coverage of hot topics mixed in with the quirky and unexpected items that you love
- Regular coverage of legal and legislative issues
- An enhanced Emerging Technology section
- And, of course, more of the high-quality writing, editing and design you’ve come to expect from *CIO*.

These improvements will continue, but we need your help to get it right. Use the e-mail addresses at the end of every article or write directly to me. This is still the magazine for information executives, and we still want to meet your needs.

Albi Lundberg

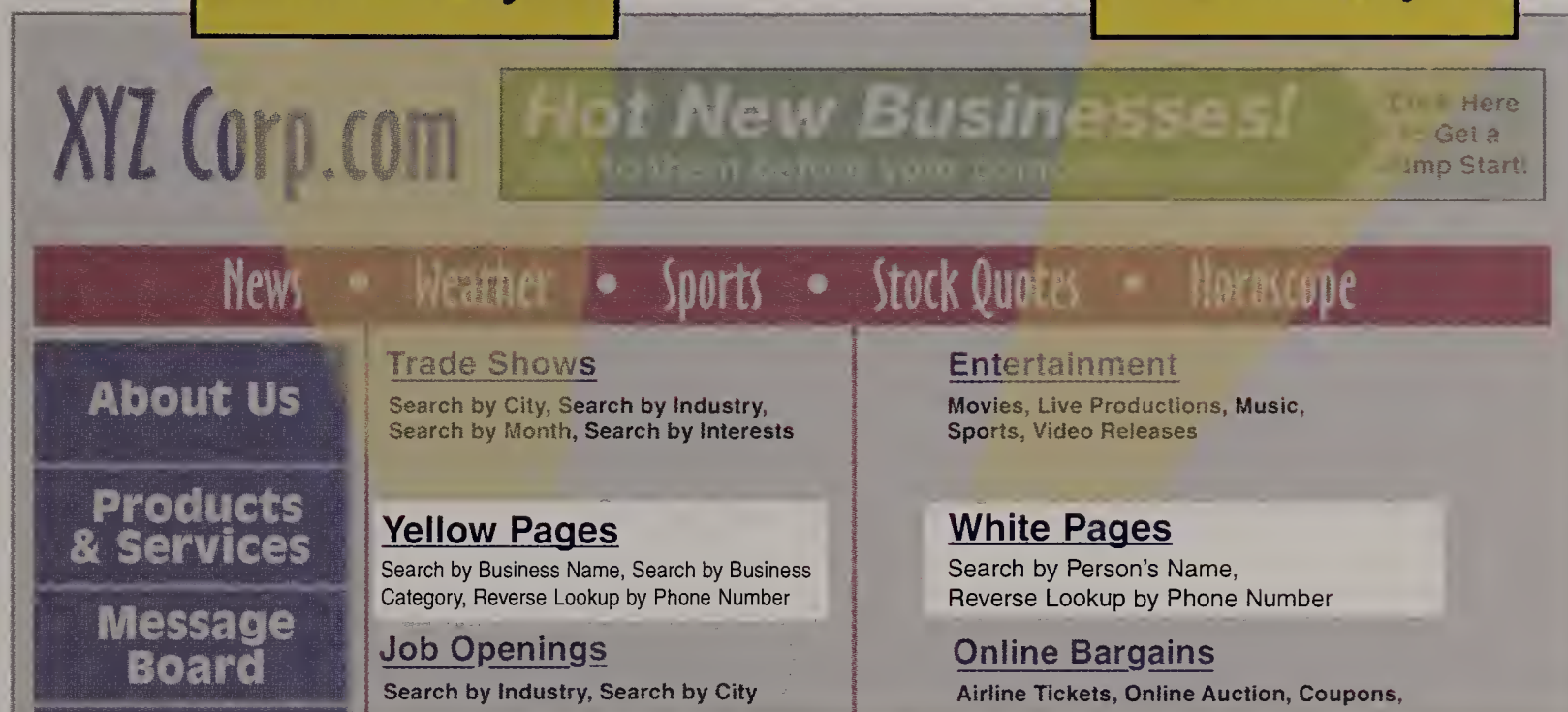
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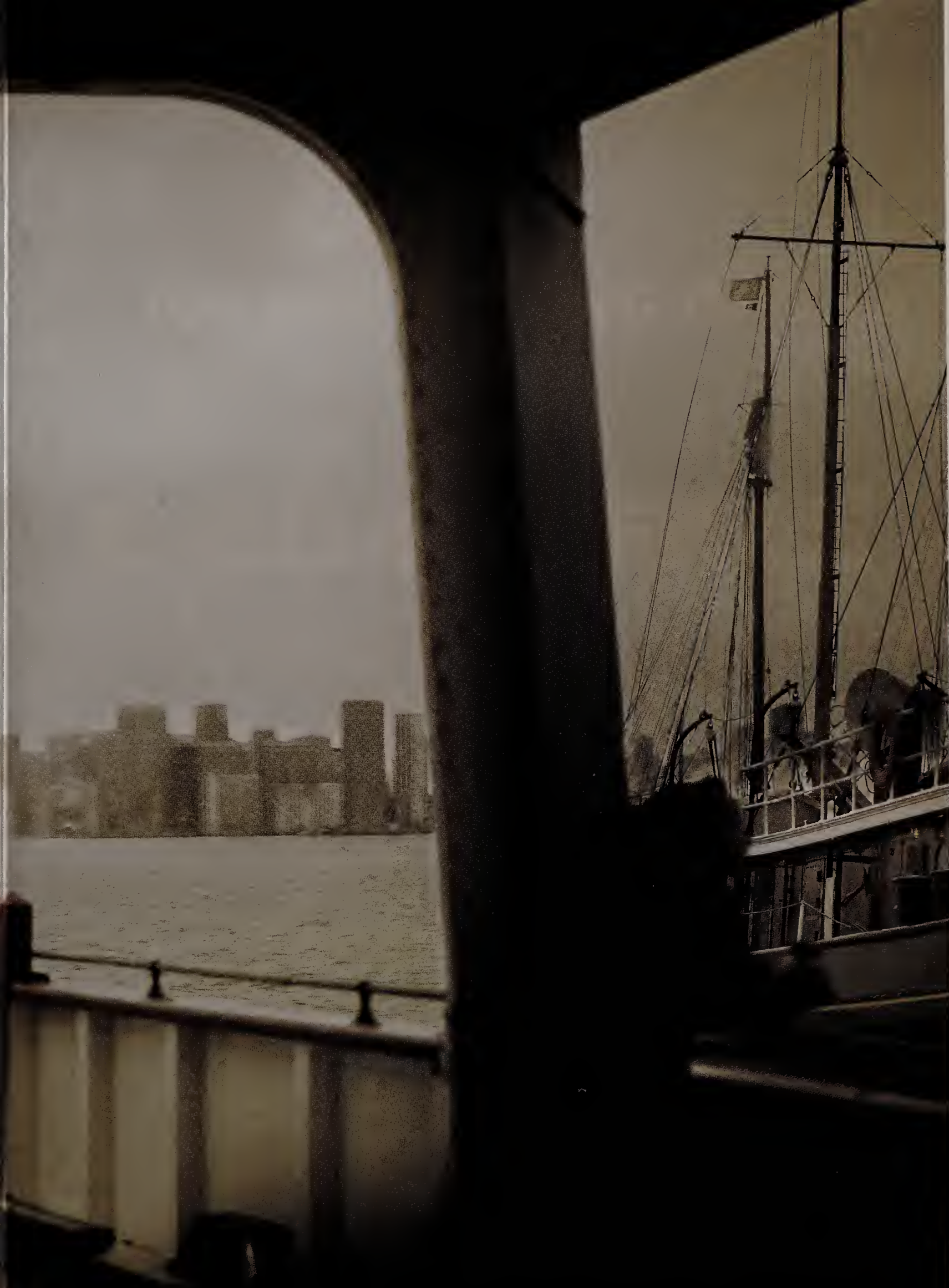
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Reader Feedback

DO THE RIGHT THING

Your answer to Jack-of-All-Trades ["Career Counsel," *CIO*, Oct. 15, 1999] was excellent: "The transition from consulting to corporate IT leadership will hinge on your ability to align your IT organization with the mission and the business plan of a prospective employer company." I find this to be the case with most IT leadership. I highly recommend classes and studies in organizational behavior and strategy to help IT leadership look at the holistic company view. Most IT "leaders" seem to be focused on doing things right versus doing the right things.

Lyle Gray • *CIO* • *M&I Data Services* • *Milwaukee* • lyle.gray@midata.com

FAST, FLEXIBLE AND FACT-BASED

I loved your article on the growing use of e-commerce strategy ["Hired Guns," *CIO Web Business*, Nov. 1, 1999]. The Internet is creating a genuine revolution that makes greater speed and flexibility essential to organizations' strategic moves. Specialists can certainly help. But your informants misstate the problem. A few months spent researching, analyzing—and thinking—are not what puts companies irrecoverably behind. It's the prior years spent in denial before they even attempted a strategy.

More to the point, though, your article may encourage the opposite and equally dangerous problem, strategy by trial and error. That approach may be fine for startups (if not always their backers). But let's not be naive about what it takes to physically distribute products or iron out channel conflicts.

Especially in business-to-business environments, it's simply foolish to rush into a change without first working through its implications with two or three main accounts. Mature corporations have too much

at risk to leap first and look later.

Fast, flexible and fact-based—that's the ticket. You don't want to be surprised by technology, but you don't want to be compelled by it either. You want to incorporate the facts about it with the facts about the market and share these between buyer and seller. After all, it's competitors we want to surprise, not our partners.

Richard E. Wilson

Managing Director

Chicago Strategy Associates

Chicago

rickwilson@chicagostrategy.com

GROUP GRUMBLING

After reading the excerpt from the book *Hot Groups* ["Jammin," *CIO*, Nov. 1, 1999], I finally know what I've gotten myself into.

I was transferred from a rather staid department to a high-tech communications department two years ago. From the outset, there was an unusually

high amount of testosterone flowing because these people considered themselves to be the "golden children" of the company.

Two years later, and after reading the excerpt, I can look back and say that everyone is in love with a process. They're hot stuff and they know it. They work long hours and love it. Even when they're away from the office, they discuss work and the idiosyncrasies encountered during their travails.

A couple of months ago, I was called into my manager's office and criticized for not wearing the "team shirt." It didn't matter that at the time the "colors" were handed out that I was in the midst of a battle to secure a bonus awarded to all the other department managers, or that I found the shirt ugly. I was deemed not a team player.

This group circles its wagons regularly when they perceive someone is out to stop the process they so dearly love. As a result, they tend to "create" their own enemies. They also tend to work secretly, which, I fear, does promote their cavalier and defensive attitude.

The department is currently at a crossroads of sorts. Funding cutbacks have severely hindered future plans. The cutbacks are due, in large part, to the fact that another hot group is getting all the funding. It will be very interesting to watch how my hot group manages this change.

Keith Buchanan

Engineering Manager

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There isn't a single CIO on the editorial staff of *CIO* (although we do have an editor with an MBA and an IS concentration). We don't employ any high-priced IT or business consultants (we did have a writer leave recently to join a Big Five firm). So all of the ideas and articles we develop can come only from knowing and interacting with our readers and other outside experts. Our mission is to get inside their heads to learn what they need to know. Some of these readers have let us spend a lot of time in their heads—they've either agreed to serve on our Editorial Advisory Board or have helped us more informally, giving generously of their time and insight. We plan to use this page to periodically acknowledge and introduce them.

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Adviser Spotlight

Arthur Tisi, CIO for The Metropolitan Museum of Art in New York City, has held that position for nearly seven years, heading an IT team that now numbers 50. He believes that nothing in electronic commerce—not site design, stickiness or surfer seduction—will be a greater challenge in the next five years than integrating legacy and real-time data and delivering it in real-time to the site. The stakes are high. "If someone visiting your site a few days before Christmas wants to order five ties for five different family members, the credibility of your firm is based on having those ties in stock if you say they are in stock," he says. "If we use cookies and tell people what they purchased last time or how much credit they have, it has to be real; it can't be weeks out of date because we haven't processed the updates." The real-time imperative holds for the content as well as the commercial portion of the museum's site. No one wants to wait for periodic refreshes of static HTML pages to get the latest information about the museum's objects and exhibits.



PHOTO BY JOHN RAE

A black and white photograph of a man in a suit jumping in the air with his arms outstretched, smiling. In the background, a city skyline with several skyscrapers is visible under a cloudy sky.

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During the spring and summer of 1999, the following individuals joined many of our advisory board members in helping us recraft CIO's goals and editorial content, the results of which you see in this issue and will be introduced in the coming months. We thank them for their feedback, criticism and indulgence.

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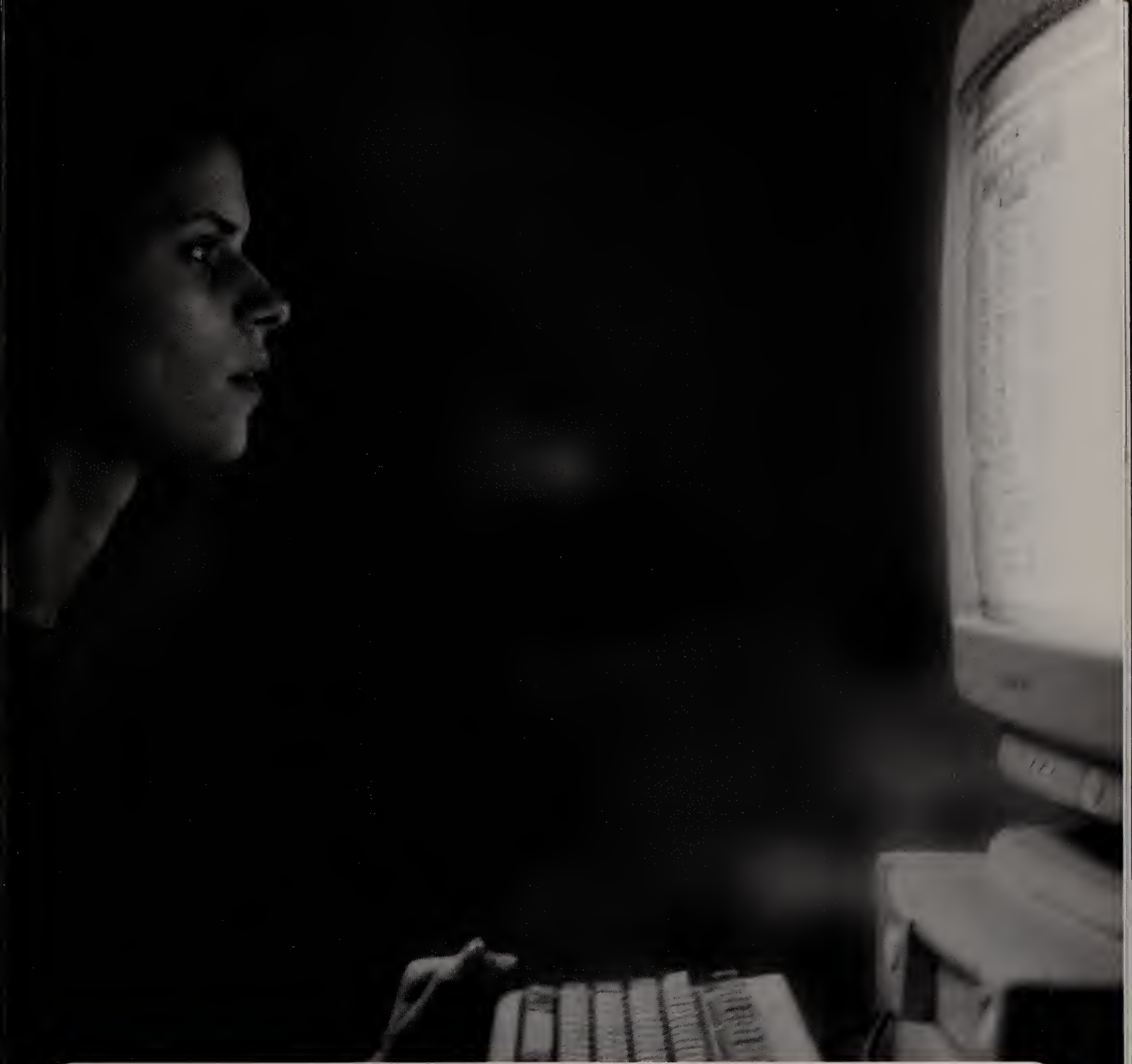
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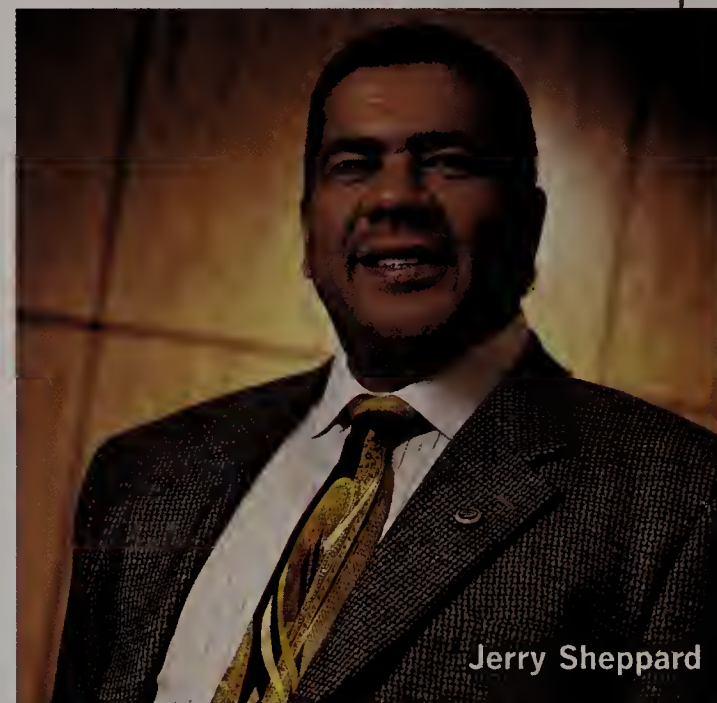
Sheppard and His Flock

By Meredith Levinson

JERRY SHEPPARD, president and founder of Comprehensive Data Processing Inc. (CDP), has three computers in his home. Only a few of his black friends have any. His friends, says Sheppard, view computers as work rather than educational tools. And this, according to Sheppard, is bad, because it means that his friends' children are highly unlikely to pursue a career in IT. (See "Let's Conquer the Divide," Page 142.)

Black children's lack of exposure to computers may be one reason there aren't more blacks in IT. (According to the U.S. Department of Labor, they make up only 7.2 percent of all computer systems analysts and scientists while accounting for 12.9 percent of the total U.S. population) And Sheppard has another reason: Blacks don't view technical jobs as a way to help their people. Instead of IT, he says, they pursue careers in education, medicine, law and social work. Sheppard says private industry needs to show blacks that IT is "a great and dynamic industry to be in." Only then will blacks begin to see how they can use their technical skills to give back to their communities by teaching others these skills and by launching their own IT

Continued on Page 36



Jerry Sheppard

Department of BIG, Scary Numbers

\$3 TRILLION: assets that the online brokerage market will have by 2003 • **\$415 BILLION:** what it was in 1998. **\$1.25 TRILLION:** savings that will be realized in industrial nations through e-commerce by 2003. **\$17.6 BILLION:** what it was in 1998. **\$11.5 BILLION:** advertising dollars that will be spent online in 2003. And now for a **REALLY** big, scary number: **\$1.3 BILLION:** amount kids ages 5-18 will spend online in 2002.

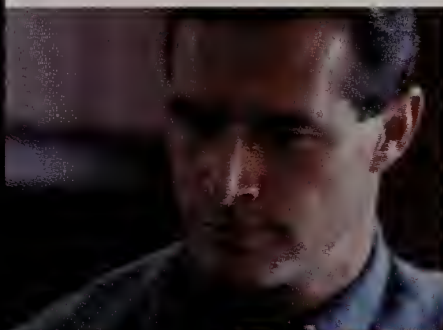
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EDUCATION

The South Won't Rise Again (If It Doesn't Get Wired)

There are now 8 million computers in U.S. public schools, twice as many as in 1993, but access to high technology and the Internet is still very uneven nationwide. Here are the best and worst states according to the number of students per terminal with Internet access in the 1998-1999 school year.

BEST

Delaware	5.8
Alaska	6.0
Nebraska	7.2
South Dakota	7.3
North Dakota	9.1

WORST

District of Columbia	31.4
Alabama	30.2
Louisiana	25.0
North Carolina	24.9
Mississippi	20.1

Source: Dun & Bradstreet Corp. Market Data Retrieval

Sheppard

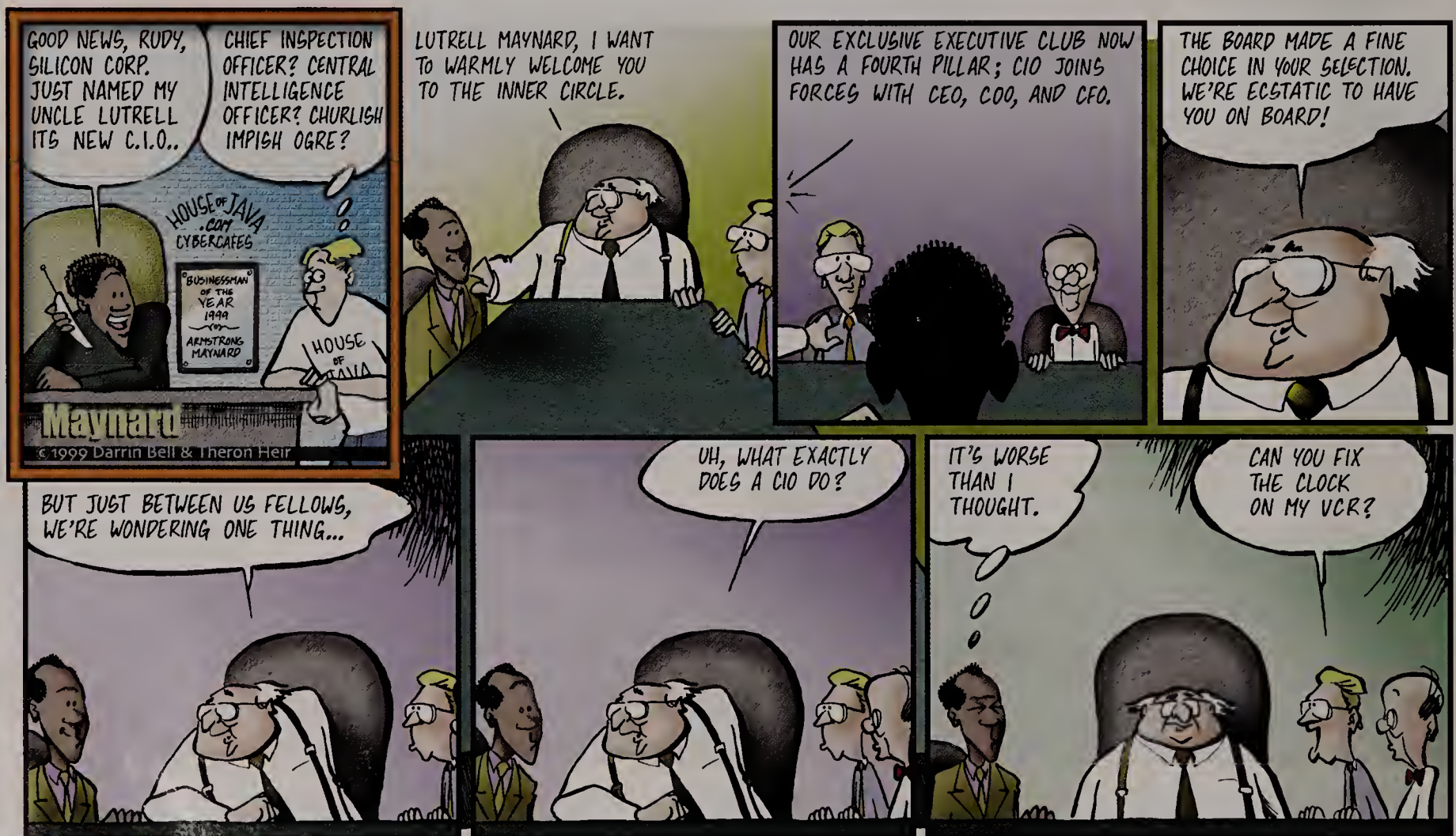
Continued from Page 34

businesses, as Sheppard did with CDP back in 1978. Thirty-three percent of the 250 employees at his Southfield, Mich.-based company are either black, Hispanic or Asian, and his company participates in career day programs with local schools and provides internships to black high school and college students.

With the current shortage of IT workers expected to increase (the Department of Commerce projects that there will be 1.3 million IT jobs to be filled by 2006), companies need to do everything they can to attract blacks to IT. To do this, Sheppard says, "Major corporations have to join hands with schools and provide them with resources such as computers, Internet access and better training to get more minorities in this industry."

As the nation celebrates Martin Luther King day on Jan. 17, CIOs should remember that the worker shortage is not just a staffing crisis but an opportunity to draw talent from untapped sources.

Maynard BY DARRIN BELL



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Washington Watch

By Tom Field

Presidential Hopefuls Stake Out Cyberspace

NEXT MONTH officially kicks off the 2000 presidential election season with the New Hampshire primary. Here's a look at how some presidential hopefuls are presenting themselves on the Web.

Bill Bradley (DEMOCRAT)

www.billbradley.com

Features Biographical material, the obligatory press room and the Bradley store, which sells "Bradley for President" merchandise such as balloons, mouse pads and neck-strap ID holders. No Knicks tickets, though.

Chief technology issues None.

Overall impression

Despite the ID holders (perfect accessory for the stylish CIO conference-goer), this site is much like the candidate himself: no frills.



Bill Bradley

George W. Bush (REPUBLICAN)

www.georgewbush.com

Features A Spanish language version (www.georgewbush.com/espanol) that offers all the same content but with fresh images of the candidate interacting with his Hispanic constituents.

Chief technology issues Tort reform, that is, Y2K liability limits. Bush wants to protect high-tech companies

from lawsuits. Hmm.

Overall impression All the right information, but his "Prosperity with a Purpose" campaign theme hardly separates Dubya from his rich ex-president's kid image.

Steve Forbes (REPUBLICAN)

www.forbes2000.com

Features An electronic campaign kit allows supporters to download Forbes postcards, screensavers and Web site banners, including one plugging Forbes' Social Security position: "If it's broke, fix it."

Chief technology issues Internet taxation. Forbes opposes taxing electronic commerce.

Overall impression It must cost a lot of money to support a Web site and a campaign as ambitious as this one.

Al Gore (DEMOCRAT)

www.algore2000.com

Features "Gore Vision" allows visitors to view Gore's TV ads and campaign videos.

Chief technology issues Closing the "opportunity gap" between Information Age haves and have-nots.

Overall impression The self-proclaimed father of the Internet (will he ever live that down?) is showing his print journalism roots; this Web site is as text-heavy as they come.

John McCain (REPUBLICAN)

www.mccain2000.com

Features A link that reads "Bush campaign staff click here" compares (favorably, of course)

McCain's Web site hit-rate to Bush's and offers a top 10 list of McCain Web pages that Bush supporters should visit in their competitive intelligence efforts.

Chief technology issues None.

Overall impression

Seems a little narrow to focus so much attention on one primary opponent, even if he is the leader.



John McCain

Digital Democracy?

A NEW REPORT from the Washington, D.C.-based Foundation for Public Affairs suggests that the Internet has not significantly changed the way public policy issues are created, debated and reported. *Creating a Digital Democracy: The Impact of the Internet on Public Policy-Making* (Foundation for Public Affairs, 1999) concludes that the Internet enables a greater level of political activity...but only among that minority that already chooses to participate in the process.

For more information on this report, visit the foundation's parent organization, the Public Affairs Council, at www.pac.org/pubs/internetstudy.htm.

"What's a CIO?"

—A U.S. Congressman

Wonder why CIOs are not being heard on policy issues? Wonder no more. See "The Influence Peddlers," Page 88.



Got news or views on IT issues in Washington? Send them to washington@cio.com.



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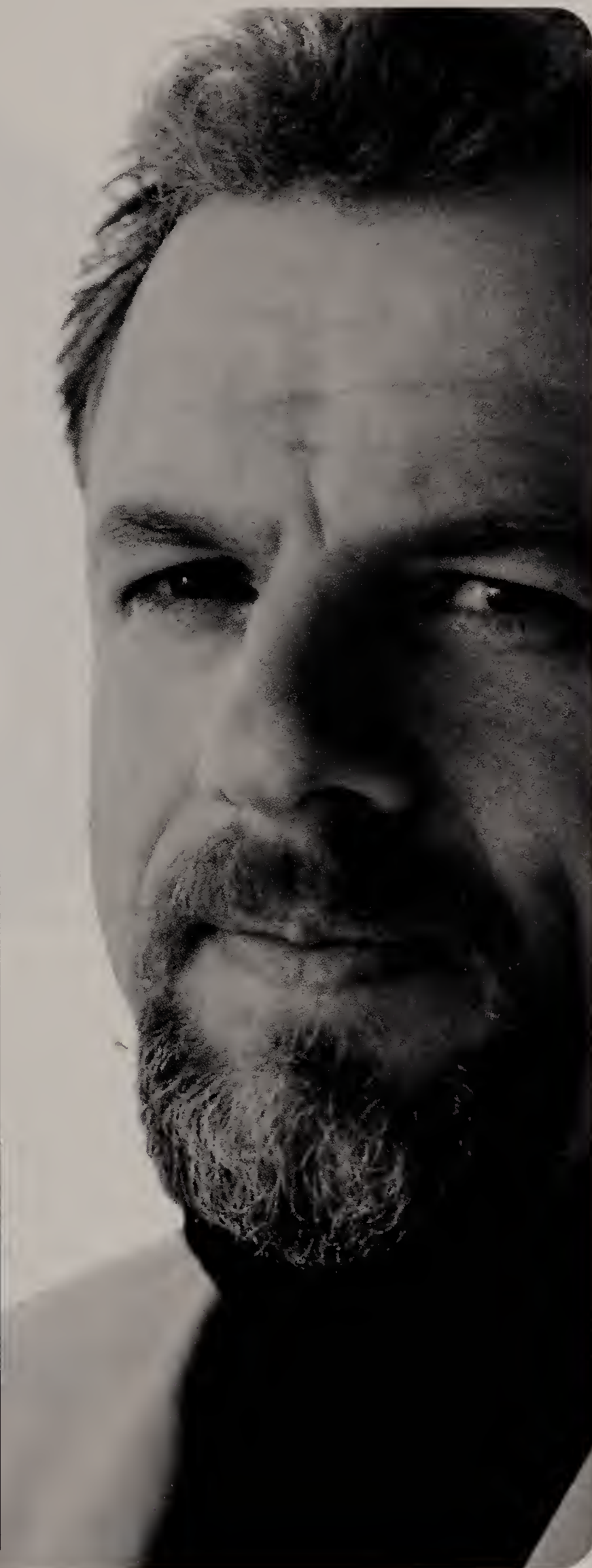
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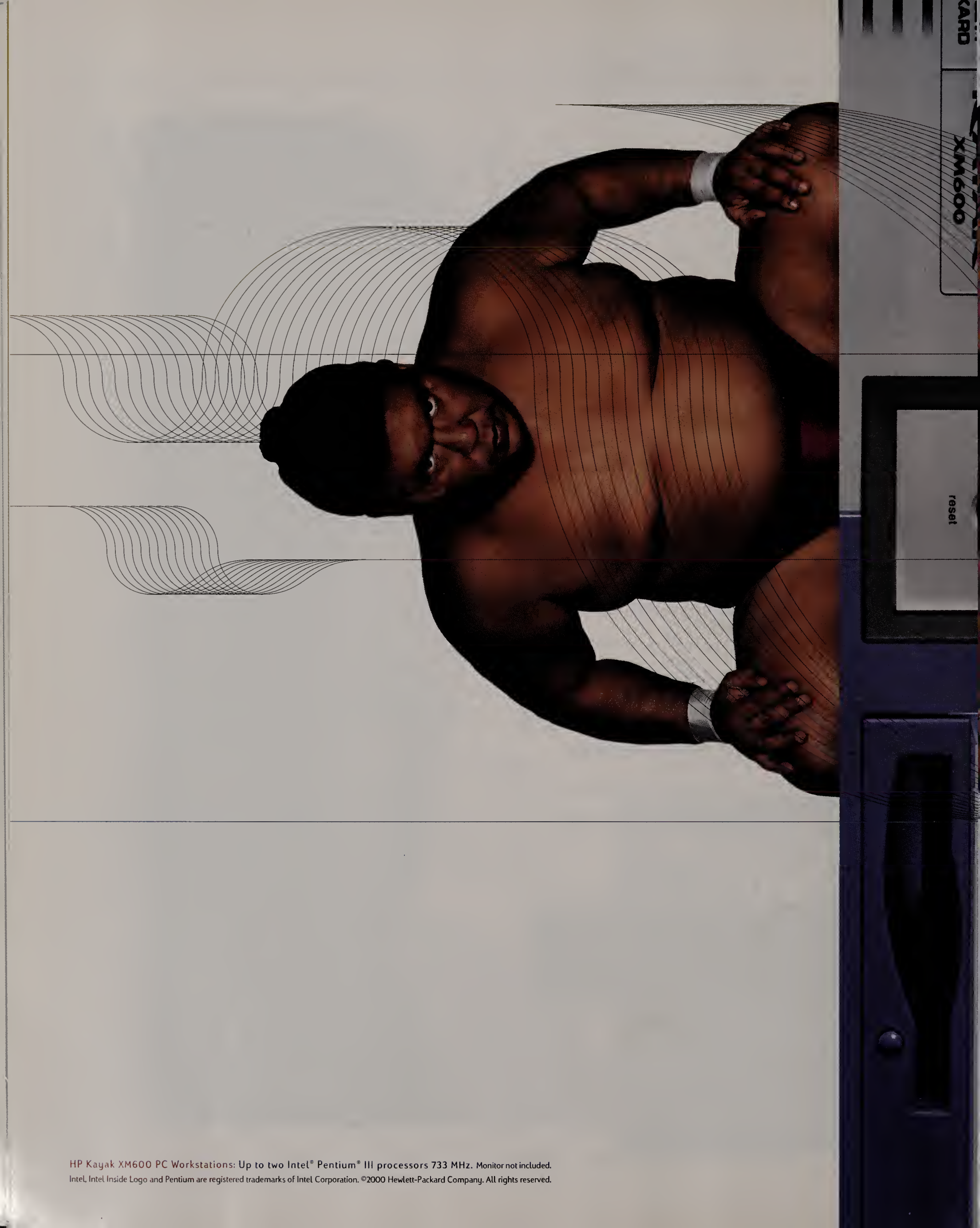


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HOT TOPIC



SUPPLY CHAIN MANAGEMENT

What's the Holdup?

By Derek Slater

OK. By now everybody has implemented their enterprise resource planning (ERP) systems and squeezed all the inefficiencies out of their internal operations. Right? And supply chain management (SCM) software is supposed to be the "next big thing," squeezing the inefficiencies

out of external transactions through advanced planning and scheduling, inventory and warehouse management, transportation planning and so on. Right?

Not so fast. While the SCM watchers at AMR Research Inc. in Boston say the market for SCM software totaled \$2.6 billion in 1998 and grew about 48 percent in 1999, they still characterize SCM as underperforming given the \$800 billion or so U.S. companies spend on logistics each year. (AMR distinguishes between software products for supply chain management, planning and execution, but for simplicity let's lump them all under the SCM rubric.)

So why is SCM getting (relatively) short shrift?

Well, according to users and analysts, implementing an integrated, companywide SCM system is every bit the pain in the posterior your ERP installation was. SCM requires heavy process rework and the creation of centralized planning groups. ERP veterans will recognize that those, in turn, require top-level executive support. And SCM isn't yet on the radar in many boardrooms, according to John Fontanella, a research director for supply chain execution at AMR. Instead, users are buying bits and pieces of SCM software to automate existing processes but not going for the whole enchilada. "It doesn't excite senior management, so SCM remains a tactical decision," says Fontanella. "Their warehouse is growing, so they buy a warehouse management system, but there's no clear thought about integrating that with the rest of the company."

It's all a bit ironic considering that while everyone struggles to show ROI on their massive ERP projects, the efficiencies promised by SCM software (anybody want to lower their finished goods inventory?) are easily measurable.

Go figure.

E-LOGIC

"E-commerce is the cause; e-business is the effect."

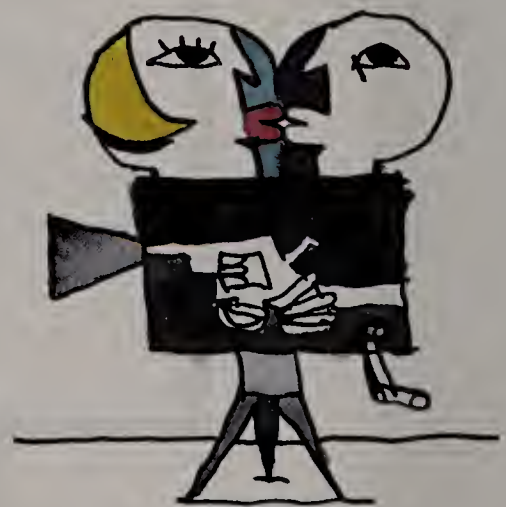
—Dr. Ravi Kalakota, director of the Center for Digital Commerce at Georgia State University, speaking at the Society for Information Management Conference in Atlanta last October.

GLOBALIZATION

Kiss Kiss, Bang Bang

ACCORDING TO a recent report in *The Economist*, Ramya Neelamegham of the University of Colorado and Pradeep Chintagunta of the University of Chicago were able to predict which films would thrive in which foreign markets by analyzing how 35 movies performed in 14 countries.

Their study concluded that thrillers are hot in Japan and Mexico, and romances do well in the United States, Sweden, Germany and South Africa. Brazil and Britain are the least predictable markets. Japan and Germany are the most predictable. Well, natch.



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SERVICES

The Visible Employee

IT IS STANDARD PRACTICE for companies to ask prospective employees whether they've ever been convicted of a crime. But for companies that want to go beyond relying on self-reports, or that are legally obligated to do so, there's software that makes getting background information a relative snap.

PeopleWise LLC of Hollister, Calif., is one provider of such preemployment screening. According to company president Gary Cornick, employers are turning to companies like PeopleWise because courts are holding companies liable for crimes committed by their employees.

PeopleWise's InstaCheck verifies an applicant's name, address, Social Security number and phone number. An InstaCheck report costs \$8.20 and is delivered in less than 30 seconds.

For more information, the company bases its HireWise report on a search of national criminal records, driving records and credit histories; the applicant's work

experience and professional and educational credentials are also verified. A HireWise report costs from \$8 to \$19.50, depending on the number of data sources searched. Both InstaCheck and HireWise reports are provided over the Internet via PeopleWise's client software, free either as a CD-ROM or downloaded from the company Web site.

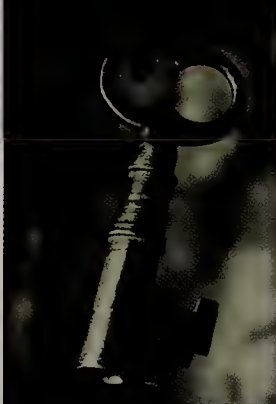
"Any type of background check for employment purposes has to follow guidelines in the Fair Credit Reporting Act," says Cornick. Job applicants have

the right to see any background reports about them.

But Robert Ellis Smith, publisher of *Privacy Journal*, a monthly newsletter available in both print and e-mail versions, sees danger ahead. According to Smith, the exchange of personal information among third parties for example, private investigators and credit bureaus presents a much greater threat to privacy than e-commerce sites divulging credit card numbers or shopping preferences.

—Megan Santosus

HOT TOPIC



PRIVACY

What You Know Can Hurt You

By Daintry Duffy

Employees aren't the only ones who should worry about the growing number of companies that peek at e-mail and track Internet use. Lewis Maltby, director of employment rights for the ACLU, maintains that companies that monitor their employees' e-mailing and surfing are going to collect a great

deal of personal information that's of no legitimate use to them. In fact, it may even put them on the spot.

Although most employees are careful about e-mail, they are less circumspect when it comes to the Web. "People use the Web to gather information about virtually everything," says Maltby, "including deeply personal subjects." For example, if an employee is HIV positive or an incest survivor, he or she may visit sites to get information and support. An employer may find it awkward to be privy to such personal information.

And awkwardness is not the end of it. One of the arguments in favor of monitoring employees is that the company bears a legal responsibility for how its equipment is used. But what if an employee makes threatening comments on e-mail, visits the sites of hate groups or reveals that he or she may have a contagious illness that could infect others in the office? Once the company possesses the knowledge, it has to act or risk being liable in potential damage suits. "As an employer or manager, once you know the facts you have an obligation you didn't have before," says Maltby. "The more you monitor, the more obligations you create."

About 17 percent of companies with over 1,000 employees currently monitor e-mail and Internet usage; by 2001, 80 percent of large companies will use software to supervise their employees' computer activities, according to a study by Framingham, Mass.-based International Data Corp., a CIO Communications Inc. sister company.



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Feeling Bullish?

THESE DAYS, the stock market lures investors with the promise of instant riches, private islands and the thrill of victory. But let's not forget the agony of defeat. Over the long haul, 80 percent

of day traders lose money, according to Michael Murphy, editor of the *California Technology Stock Letter*, a biweekly newsletter published in Half Moon Bay, Calif. And who can forget Mark Barton, the Atlanta day trader who went on a killing spree after dropping a few hundred thousand day trading?

Nevertheless, more and more people are trading securities, especially now that Web sites like E-Trade and Ameritrade

have made it so convenient. These sites provide investors with real-time quotes and advice from the pundits. But is that enough help? Not according to Murphy. All these sites actually tell you, he says, is "whether a stock is up or down."

Enter ProSuite 2000i, designed by Miami-based Omega Research Inc. The package consists of: Radar-Screen, which sorts and ranks ticker symbols according to what Omega claims to be 70 fundamental trading concepts; TradeStation, which models investment strategies; and OptionStation, which helps investors determine whether they'll profit most from stocks or options.

"The most successful traders are those who have a system. TradeStation gives you the ability to develop your own," says Ralph Bisenius, a blacksmith-turned-day-trader in Louisville, Ky., who claims to have made "a good living" last year using the ProSuite software.

But you might have to make your first killing before you can afford it. The package costs a startling \$4,799.

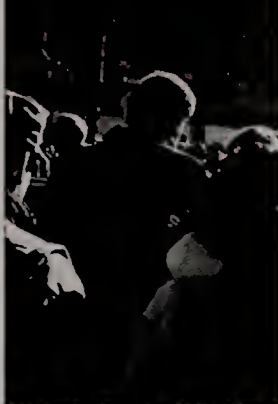
As for Bisenius, he uses a full-service broker. He doesn't trade online. Too risky, he says.

For more information, visit www.omegaresearch.com or call 305 485-7000.

—Meridith Levinson



HOT TOPIC



STAFFING

Here Today, Here Tomorrow

By Tom Field

Just because the Y2K crisis is over (it is, isn't it?) doesn't mean the staffing crunch is too.

According to the kindest estimates, there are still 300,000 vacant IT positions, and this number will only swell as companies continue to create more IT positions. Bottom line: CIOs had better figure out how to keep the people they have.

Beyond Compensation: Strategies for Managing IT Retention and Turnover is a recent white paper from the University of Houston's Information Systems Research Center (ISRC). The study proposes three strategies to improve retention rates:

COMPENSATION Pay top dollar for the hot skills you need. Money attracts stars ideal for bleeding-edge IT projects. (Caveat: These same people are also susceptible to someone else's cash, so don't count on them to form the core of a stable staff.)

CAREER Emphasize skill development and

training. Education attracts people willing to make a long-term commitment.

WORK ENVIRONMENT When you don't have the dough and can't offer long-term commitment, concentrate on creating a unique work experience. Flexible hours, comfy offices, a sense of community—these can be key factors.

For more information, visit the ISRC Web site at disc.cba.uh.edu/isrc.html.

THE CONVOCATION IS COMING! The third annual National IT Workforce Convocation is scheduled to run April 10-11 at the Wyndham Hotel in Chicago. Sponsored by the Information Technology Association of America, a Washington, D.C.-based trade association, the convocation brings together representatives of industry, government and academe to share the latest research on the IS staffing crisis. No other IS staffing conference matches the convocation for depth of content.

For more information, see the ITAA's Web site at www.itaa.org.

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Off the Shelf

Edited by Carol Zarrow

Oh, Wow!

Reinventing Work: The 50Lists (series)

By Thomas J. Peters

Alfred A. Knopf Inc., 1999, \$15.95

Even though readers familiar with Tom Peters from his influential *In Search of Excellence* may be tempted by this new series, try to resist. Judging from the first three volumes, the series looks like a marketer's vision of how to leverage a famous name for big bucks.

None of these handy, pocket-size hardcover volumes (ideal for airplane reading) contains a single reasoned argument. Instead, *The Brand You50*, *The Project50* and *The Professional Service Firm50* are lists of 50 not-terribly-clever ideas purportedly about reinventing work. But who needs content when excitement can be generated by presentation?

Each volume has lots of capital letters and exclamation points and its own color scheme. Plus, the covers have Peters' name emblazoned above the title the better for the ambitious cube dweller to display. Seasoned executives, however, may want more ROI than advice that runs to, "Iron Law: WOW

Projects call for WOW people. Never Stop Recruiting!"

On your next plane trip, tote Tom Clancy and learn something more likely to be useful at the office—like how to jam enemy sonar from a submarine.

—Perry Glasser

All the Right Moves: A Guide to Crafting Breakthrough Strategy

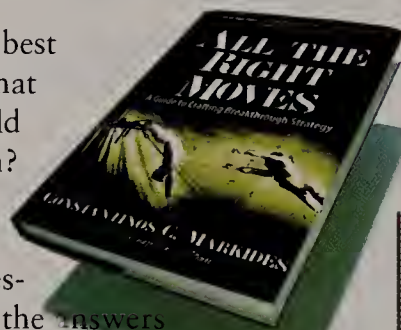
By Constantinos C. Markides

Harvard Business School Press, 1999, \$27.50

Who are your best customers? What products should you offer them? How will you do it?

Innocuous questions, yes, but the answers can make or break a company, says Markides, a professor at the London Business School. *All the Right Moves* lives up to its title by carefully walking readers through the fundamental choices that are crucial to creating successful business strategies.

—Daintry Duffy



CIO Best Seller List

5.

First, Break All the Rules: What the World's Greatest Managers Do Differently

by Marcus Buckingham and Curt Coffman
Simon & Schuster, 1999

4.

Customers.Com: How to Create a Profitable Business Strategy for the Internet and Beyond

by Patricia B. Seybold
Times Books, 1998

3.

The Innovator's Dilemma: When New Technologies Cause Great Firms to Fail

by Clayton M. Christensen
Harvard Business School Press, 1999

2.

Who Moved My Cheese?: An Amazing Way to Deal with Change in Your Work and in Your Life

by Spencer Johnson
Putnam Publishing Group, 1998

1.

The New New Thing

by Michael Lewis
W.W. Norton, 1999

SOURCE: November 1999 data, compiled by Amazon.com

TELL US what you're reading and why at books@cio.com

What They're Reading

Tom Gmitter, CIO, Cone Mills Corp., Greensboro, N.C. *Built to Last: Successful Habits of Visionary Companies*, by James C. Collins and Jerry I. Porras (HarperCollins, 1994) "I have become so enamored by it that it is required reading for our Information Services Leadership Team."

Jeff Lucchesi, CIO, DHL Airways Inc., Redwood City, Calif. *Ship of Gold in the Deep Blue Sea*, by Gary Kinder. Vintage (Atlantic Monthly Press, 1998) "I was skeptical at first, but this is a rare, riveting history book that weaves in past and present day."

Dan Sheehan, CIO, Acsys Inc., Atlanta *The Street Lawyer*, by John Grisham. (Doubleday, 1998) "I haven't read a professional book for a few months because I'm burned out from the technical stuff."



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and hours of presentation
and discussion, it is quite
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Chairman of The Board tell
the CFO, "This will bring my
Vision to Action."*

Amazing things happen when a company's information technology agenda is linked directly to its business strategy. Not the least of which is that both become more actionable.

Our client had a Vision of a new company transformed from an already successful business that was on a steady course to be one of many players in a commodity market. What had been a compliment of premium services offered to Fortune 100 Companies was under extreme pressure from many niche players who were leveraging information technology to provide similar levels of service at lower cost. This Vision defined a new plateau of service and value delivery, in the forefront of exploiting information technology.

The Chairman had brought his message to Executive Management several times creating surges of movement but not a sustained drive to the new plateau. As part

Business and IT Strategy Fusion is a Blend of Art & Science and is all About Timing.



of a joint team of Management and Information Technology Consultants, we were asked to "Bring the Vision to Action." Twelve weeks later, a program of Information Technology and Business Process Development projects was being executed and twenty-four weeks later the company was on its way to becoming that premier supplier that the Chairman envisioned.

Our business / information technology alignment process (Continual Business Alignment or CBA) rapidly stated the Vision in actionable language that became both the Business and Information Technology Strategies. For the first time, Executive, Line of Business, Human Resources, Finance and Information Technology saw how they could contribute to realizing The Vision. By sharing an understanding of what the future company would be capable of doing, they shared a context for their work and what must change. Context enabled them to work synergistically towards the common goal.

CBA carried the shared strategy further to define two Information Technology Architectures. One architecture addressed the structure of Service Delivery Systems and the other addressed Business Support Systems. By linking the two, common infrastructure was defined while unique requirements were identified and accommodated

through linked research, development and operational systems. Finally, CBA produced a Project Agenda that clearly stated how each contributed to the Vision and Mission of the company.

With CBA, our client clearly articulated its strategic initiatives, established architecture and infrastructure designs to support the initiatives and defined projects to deliver the systems of people, process and information technology that would realize The Vision. All of this was done in a single business quarter.

CBA enables a company to adopt a quarterly Strategy / Action Alignment process that truly integrates business and information technology planning. TEC assists clients in building Business Architecture Design capabilities, coaches in-house teams through initial CBA cycles and delivers integrated Strategy, Architecture, Infrastructure and Project plans.

The Science is in the Process. The Art is in the Designs. Speed and Repetitive Cycles assure continual alignment. CBA can bring Business Goals and Information Technology Potential into a sustainable fusion reaction producing business measurable value.

*Jim Dowling is Vice President of Process Consulting at **TechnologyEvaluation.Com**
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MANAGEMENT

Business by the Bard

EXECUTIVE SUMMARIES of Shakespeare's tragedies reveal the managerial genius that bloomed in Stratford-on-Avon 400 years ago. When you next fly coast to coast, try reading one of these best-practices handbooks.

For founders of large, family-run enterprises interested in succession strategies: King Lear.

Seeking early retirement, the founder and CEO of Britain LLD attempts to divide his organization into three divisions, each to be run by one of his daughters. To his sharp disappointment, his most favored child refuses any involvement with the business; the other two take partners who have conflicting strategies for the company's future. Disappointed, the CEO attempts to move back into the executive suite, but without a clear vision his attempt to reassert his leadership fails tragically.

For CFOs, finance industry executives and all legal departments: The Merchant of Venice.

An import-export business faces a severe cash-flow crunch after an uninsured, fully loaded vessel sinks at sea. An executive attempting to refinance agrees to a novel form of collateral, but when the executive defaults and the banker attempts to collect, the executive sues to vacate the contract. The ensuing case explores discount cash flows, contract law and business ethics.

For HR execs, CEOs and partner-level members of consultancies: Othello.

Bored after a string of successes, a CEO hires a consultant to evaluate the performance of key corporate personnel. With these HR functions outsourced, the executive loses touch with the operation and begins to distrust even loyal lieutenants and partners. The result? Vital operations are choked off.

For upwardly mobile division managers and line workers: Macbeth.

A middle-level manager is promoted beyond his leadership capabilities. Haunted by fear of failure and goaded into rash actions by his ambitious wife and three consultants whose reports can be read in two ways, he temporarily seizes control of the organization. Inner-circle executives desert the company and organize a successful hostile takeover.

—Perry Glasser



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H A R D B A L L A T H O M E D E P O T

**"If you don't make
dust, you eat dust."**

—Ron Griffin, CIO, The Home Depot, speaking at the Society for Information Management Conference in Atlanta last fall.

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THIS IS NO TIME FOR CONVENTIONAL THINKINGSM

New Economy

Opportunities and Risk in a Changing World

The Customer Information Backlash

You've been hoarding information about your customers for years. You'd better start giving it back.

BY JOHN J. SVIOKLA

THE CUSTOMER INFORMATION PARTY IS OVER. Customers are tired of giving up their personal information only to have it used without their knowledge in ways that don't offer them any benefit. Smart companies are going to start giving customers their information back. All of it. In a format that lets customers share their information not only with you, but with your divisions—even your competitors.

Heresy? Try survival in the Internet economy. As the thrill and novelty of doing business on the Web wear off, customers are beginning to chafe at the amount of information demanded by the Web sites they visit.

The backlash has been a long time coming. The Internet is to a marketer what a CAT scanner is to a doctor. It enables the pitchmen to examine the brain without opening the cranium—observing how customers act in online shopping environments, in real-time. The dynasties of Amazon.com, Yahoo, Lands' End, Garden.com and many other Internet companies were built on the bedrock of knowing their customers' search patterns and desires better than their brick-and-mortar competitors did. Investors are willing to give these upstarts hundreds or even

thousands of dollars per subscriber—adding up to billions in market capital—because they know so much about their customer base.

Marketers use this information to create environments that are driven by customer demand. W.W. Grainger, for example, the \$4.3 billion maintenance, repair and operating supplies distributor based in Lake Forest, Ill., has seen its sales per order double (from \$125 to \$250) since customers started buying on the Web site (www.grainger.com). In return for the information customers give Grainger, Grainger tailors its search tools to help them find products easily using their particular industry's jargon. The result is happier customers who spend more.

But will this giveaway of customer data continue? I doubt it. Customers are beginning to realize that their information and navigation patterns and buying preferences are valuable



ILLUSTRATION BY JENNIFER JESSEE

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"Who's On The Bench" white paper and a free CD.

New Economy

assets. If the capital markets are giving Yahoo \$1,000 per subscriber, customers will ask, "Why can't I take my file of my behavior and preferences and sell it to the highest bidder?"

To date, Net merchants will not allow you to take your information with you. You can ask Amazon.com for a list of what you have bought, but it is in such a cumbersome form as to be useless. The result is that each time a consumer wants customization, he or she must teach the merchant by indicating each individual preference. Some sites have begun to pay people for their participation, but customers must continually reenter the data and demonstrate their preferences through interaction with each site, rather than simply being able to box up that information once and ship it to different sites when needed.

And how many times do customers need to prove that they are worthy of a good credit rating? On eBay's Web site (www.ebay.com), for example, other buyers and sellers rate your reliability and quality as a buyer and seller. Do you pay on time? Do you represent your goods and services correctly? Reputation is obviously very important in that online community. However, there is no way to take your good reputation with you to other auction sites.

Laying the Groundwork

New entrants to the market are just beginning to solve this problem. Startup company PrivaSeek Inc. of Broomfield, Colo., lets you register once and then determine how much of your data you want to share with the different Web sites that have signed up to participate in the program. Customers have "Personas," which are kept at PrivaSeek's Web site (www.privaseek.com). Then, when they visit a participating commerce site, they push one button to fill in the information needed by the site. This is the first step in giving control to customers.

The natural next step is giving customers control over their buying power. A San Mateo, Calif., startup, NexTag.com, allows users to register and then negotiate with sellers for the best price. When you go to the site, you get a list of suppliers that are willing to sell you the item and their prices for it. You then state *your* price, and the sellers get the chance to meet it—either in real-time or via e-mail. The site keeps track of your buying behavior and displays it when you begin negotiating. If a seller meets your price and you accept, your "reputation" (a numerical rating) improves—perhaps leading to lower prices the next time you negotiate. In this process, you're profiting from your own buying profile.

VOICE

DATA

VIDEO



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Information is

Companies that give their customers' information back now—before the infomediaries establish critical mass—will reap many benefits besides happy customers. Imagine data maintenance done by the customer. Imagine the time and money saved by not having to sort through legacy databases that contain four names for the same customer. That work is all done gladly by the customers, if it means they will get less egregiously ill-suited junk mail and fewer telemarketing calls at dinnertime.

A standardized format for entering information also means customers will be able to customize their preferences much easier when dealing with different companies. Standardized data sharing means you can invest in more customization on your Web site because so many more potential customers will be able to access the features you build into the site.

What's Yours Is Mine

Some powerful forces are holding back the move to open preference, however. The "if it ain't broke, don't fix it" argument will be a popular response from most marketing honchos. Worse, legacy systems that contain the data are often challenging to work with. And privacy concerns must be dealt with carefully so that customers' behaviors are not shipped out against

their will. Yet it is possible to navigate these murky waters to create strategic advantage. For example, Citigroup, formerly Traveler's Group and Citicorp, first gave its customers the ability to download credit card transactions through Quicken in the early 1990s. The feature proved so popular that most credit card companies now offer the service through Quicken, whose standard information format has become a magnet for both banks and their customers. That was just the beginning.

CIOs are the senior executives who best understand the power of open systems. They know that's why the Internet became popular in the first place. It is vital to let your colleagues know that allowing customers to own their personal behavior does not mean losing them to competitors. It will create a new and deeper relationship. Companies that open up to customers—and have the effective, efficient business processes to execute the orders—will get more of them. The only thing lost will be the illusion of control. **CIO**

John J. Sviokla, a former Harvard Business School professor, leads the digital strategy practice at Diamond Technology Partners. Will you give your customers' information back to them? Tell us at neueconomy@cio.com.



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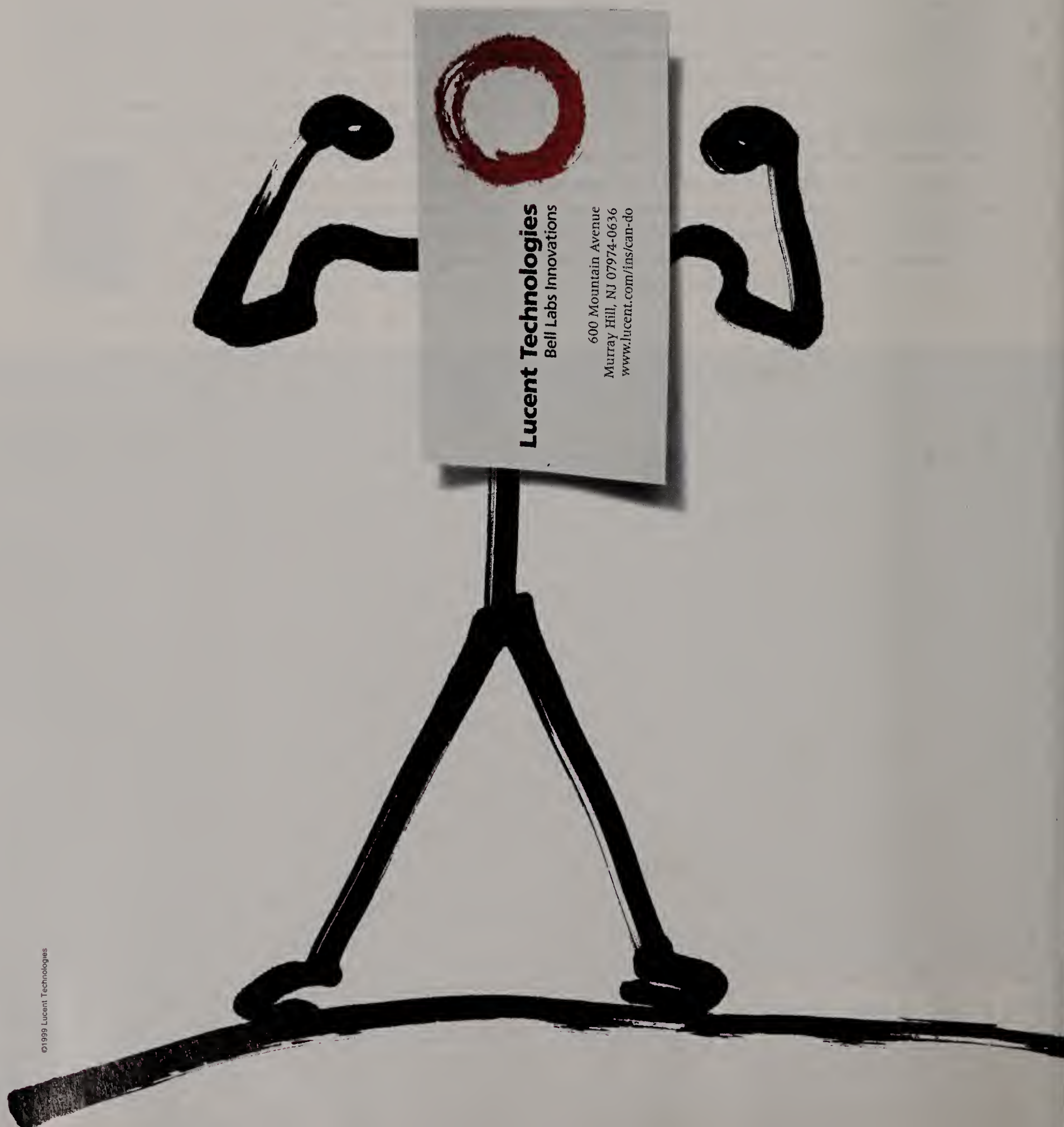
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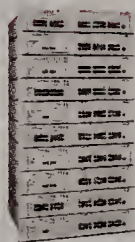


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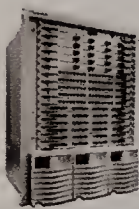
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Fine Print

What You Don't Know Can Hurt You

Your Money or Your Name

Laws change to grapple with sticky issues of electronic kidnapping and extortion

BY BRETT N. DORNY

MOST OF THE TIME, FINDING OUR WAY along the information superhighway is easy. We don't even have to ask for directions. If we want information on The Coca Cola Co., we just go to coke.com, and there it is. And if we want information about Disneyworld, it can be found at disney.com. However, until recently, if we wanted information about Dunkin Donuts and went to dunkindonuts.com, we found nothing. There was some information at dunkindonuts.org, but it was posted by disgruntled customers and employees. Many companies, such as Wendy's and Volkswagen, have found that their well-known trademarks, names and variations of their names have been registered as domain names by someone else, someone who is eager to sell the brand name, for a large sum of money, back to the company that has spent millions of dollars building that brand. That practice, the registration of someone else's trademark or trade name as a domain name for the purpose of selling it to the appropriate holder, has become known as cybersquatting. It is regarded, by victims, and by most observers, as a pernicious practice, as well as a murky one.

While domain names that mimic a company name are

mainly an inconvenience to the Internet users looking for information, they can represent a real threat to the companies whose names are used. Often, those companies have little choice other than paying the cybersquatter's ransom.

Internic, the original company selected to register domain names, started with a first-come first-served policy—the first person who selected a domain name received the name, no questions asked. That practice would have worked fine if every company was Internet-savvy from the start. Unfortunately, many were not. A great many traditional companies were slow to recognize the significance of the Internet and World Wide Web as the information vehicle of the future. This left room for others to step in and act first. Registration of a domain name is cheap and easy. The registrant merely pays a \$70 fee and completes a form. As long as the domain name is not already taken by someone else, no other action is needed. The



ILLUSTRATION BY DAN YACCARINO

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registrant does not even have to use the domain name or produce a Web site. Those who recognized the value of the Internet realized they could pay the \$70 fee and register names to be sold later for tens of thousands, or even hundreds of thousands of dollars. Cybersquatting was born. Some crafty hopefuls even registered as domain names the 800 telephone numbers of large service corporations.

Naturally, complaints about the first-come first-served policy were soon raised, and legal experts started thinking about what might be done to prevent the kind of legal extortion that was flourishing. Since cybersquatting evolved from the use of others' trade names and trademarks, trademark law appeared at

Some crafty hopefuls even registered as domain names the 800 telephone numbers of large service corporations.

first to be the most appropriate mechanism to address the issue. But there was a problem with that reasoning. Trademarks are protected from the use of similar marks that cause confusion among the public. As long as the use does not cause confusion, different people or companies can use similar or identical trademarks. Often, the cybersquatters do not actually use the domain name. Therefore, there can be no confusion. And even in cases where the names were used, Web site users generally would not believe that the site was owned or operated by the trademark owner, since they relate to different products or services.

The remedy for a trademark law violation is an injunction from committing the confusing use. While preventing a confusing use of a domain name is important, generally the trademark owner wants to become the owner of the domain name. Assignment of a domain name is not an available remedy under trademark law. To get the domain name, the cybersquatter's ransom still has to be paid.

Internic, for its part, did not want to be charged with creating a policy for deciding domain name disputes, so it left the matter to the courts. At the same time, however, in an attempt to limit its own liabilities, Internic instituted a policy of placing on hold any name involving a trademark dispute. Disputed names could not be used until the dispute was resolved. While this move got Internic off the hook, it raised a new problem. A proper domain name owner was precluded from using its own domain name even if the alleged dispute was baseless. Trademark law is based upon the use of a mark in connection with specific goods and services. It allows different companies to use the same mark with distinct products. However, only

one domain name is available. When there are multiple trademark owners there is no process for determining who should get the domain name. Nevertheless, any trademark owner could assert that a dispute exists which prevents use of the domain name. Also, while some words represent specific products, they can function as a trademark for other items. Apple .com could equally apply to Apple Computer Co. and an apple grower. How does one decide who gets the domain name? A registrant might have as much right to the domain name as a trademark owner. The wait for resolution of a domain name dispute, which may take years, can damage a proper user hoping to use the name he or she has developed.

Since trademark law, which is set by statute, is now understood not to apply to domain names, further government action is necessary to address this new type of property. First, due to complaints about the ways in which Internic was handling the assignment of domain names, the government stepped in and selected a new process. A new entity, Internet Corporation for Assigned Names and Numbers (ICANN), began assigning names. One of the first things ICANN did was to develop a policy relating to disputes regarding domain name assignments. Congress has also worked on developing a policy for resolving disputes within the courts. Recent bills have been passed to amend trademark law to address domain names. Both ICANN's draft policy and the new bills treat domain name registration in the same way.

Domain names are still to be registered on a first-come-first-served system. Therefore, as between two possible users of a domain name, the first to attempt to register the name will have the rights to it. On the other hand, domain names cannot be held for ransom. A trademark owner can dispute a domain name registration for an identical or confusingly similar name to its mark. However, the trademark owner will only prevail if it can show that the registrant acted in bad faith; in other words, registered the domain name for purposes of extorting big bucks from its more appropriate owner. Bad faith is shown by offering to sell the name for large sums or by nonuse, or by use not related to a legitimate business or in connection with a confusing business. If the trademark owner prevails, not only is the domain name owner precluded from using it in a confusing manner, as under current trademark law, but the domain name registration is canceled. This allows the trademark owner to register the domain name as the first registration for the now canceled domain name. **CIO**

Brett N. Dorny is of counsel in the Boston office of Mintz, Levin, Cohn, Ferris, Glovsky and Popeo PC, where he specializes in intellectual property law. He can be reached via e-mail at bndorny@mintz.com.



PHOTO BY DAVID SPINK

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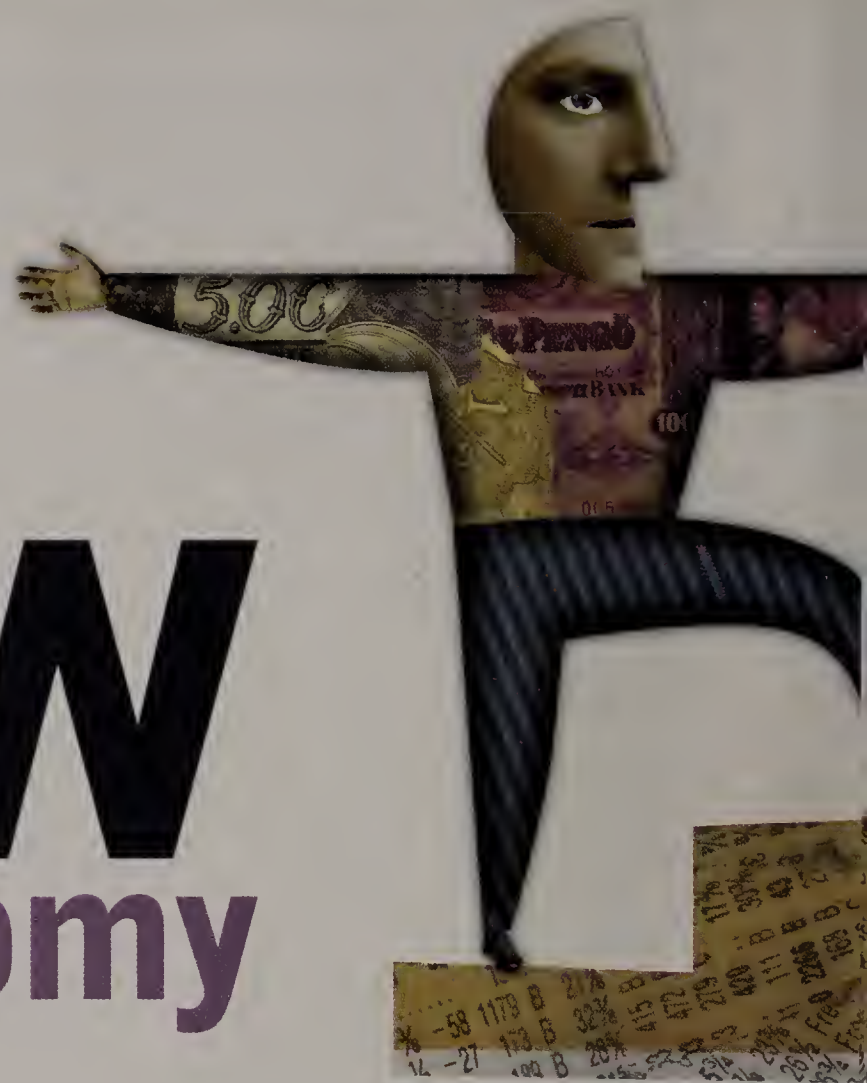
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The Face of the NOW Economy

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F

orget the "new economy." Electronic commerce isn't the wave of the future, it's right now. And traditional business rules are evolving to accommodate it.

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ter, **John P. Kotter**, acclaimed business author and professor at the Harvard Business School, spells out how CIOs can become more effective leaders. Attendees will receive

a copy of his latest work, *John P. Kotter on What Leaders Really Do*, a collection of his most notable articles for the *Harvard Business Review* on the real work of leaders. **James C. Wetherbe, PhD** joins us once again as the conference moderator and experience leader, and will present some of the pitfalls that CIOs need to be cautious about as they

achieve change during turbulent times.

Justin Yaros, Twentieth Century Fox's Senior Vice President and CIO, shares how the entertainment giant is working to understand both the current threat and

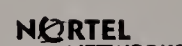
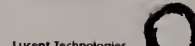
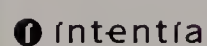
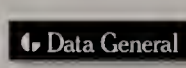
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Executive Vice
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Michael Dillard
Executive Vice
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Tom Woteki
CIO and Senior Vice
President
The American
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future opportunities the Internet and other technologies represent to this industry.

As the Executive Vice President and CIO of ClubCorp, Inc., the world leader in delivering premier country club and world-class private resort experiences, **Michael Dillard** offers insight into the pitfalls and benefits of incorporating high-tech in a very high-touch environment. **Tom Woteki**, CIO of the American Red Cross, discusses how the 120-year-old non-profit organization is refashioning its service delivery model to meet market demands; and formulating new business models to compete with other ".orgs" for volunteers, donors and customers. **Ann Delligatta**, COO of autobytel.com inc., discusses how Internet-based auto intermediaries are revolutionizing the way automobiles are purchased, financed, insured, serviced and eventually re-sold.

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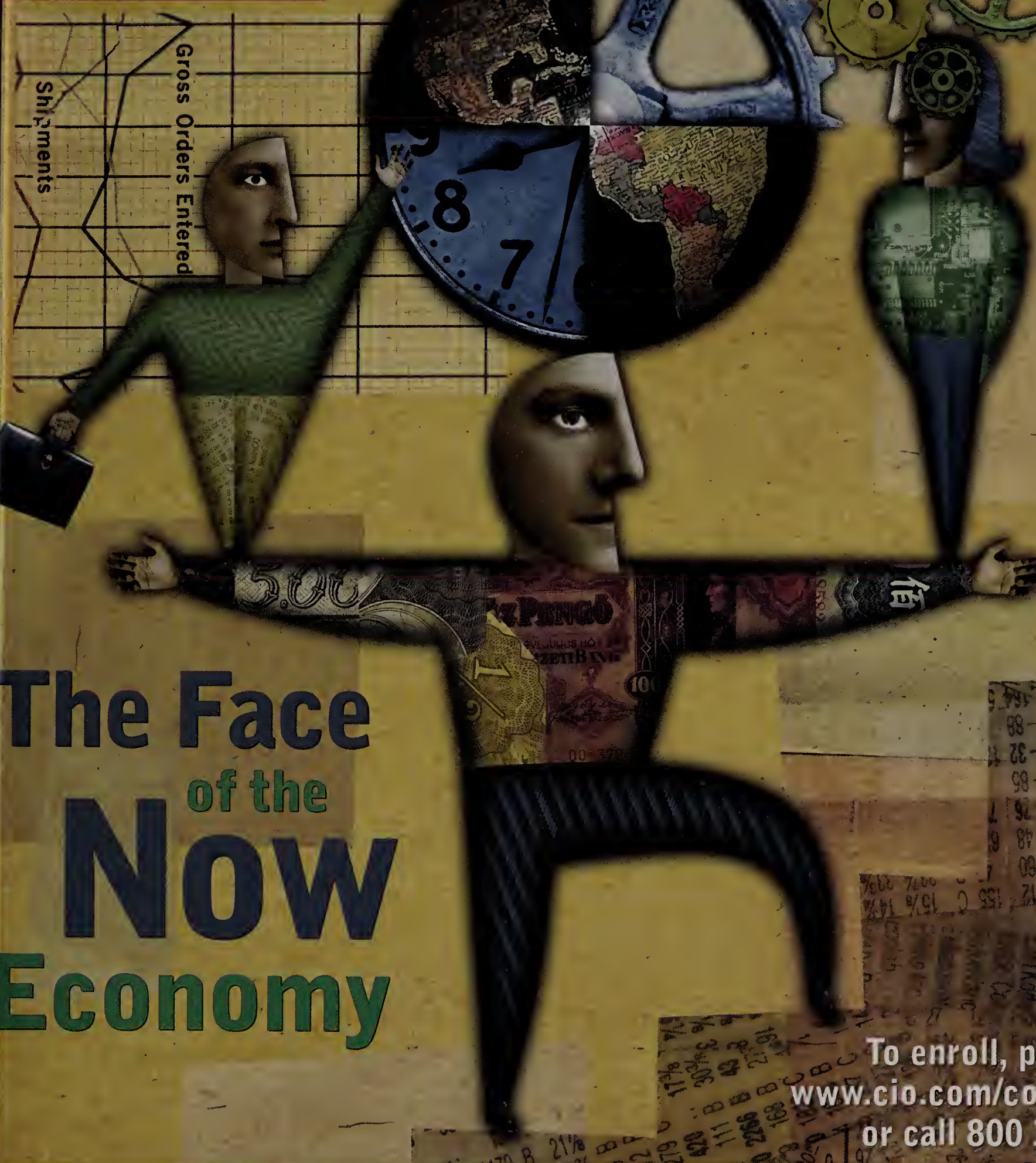
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Career Counsel

Mark Polansky Offers Advice to Aspiring CIOs and IT Managers

Q Here is a scenario for you. I have the opportunity to join the ranks of electronic-business leadership as master project manager for all e-business activities at a \$3 billion company. My alternative is to join a \$70 million classic organization. I am tempted and fascinated by the e-biz opportunities, but because I see it as a hype wave, I'm leaning toward the classic P&L. What's your assessment of the current e-business wave and what it will do to a senior manager's competitiveness (especially since everybody is jumping on it right now)?

A Dear E-Tempted: I can't think of any reason not to get e-business experience. Whether you believe that the current buzz around e-commerce is hype or not, it is clear that the Internet is a rapidly growing and very important information medium, channel of distribution and mode of operation for virtually all companies today and in the future. The market value of adding e-business experience to your resume is huge. Today, e-business experience is a market niche and a plus on CIO resumes; tomorrow it will be a requirement. Besides, doing new things should be fun and exciting!

Q There seems to be a feeling among senior management that after age 40 one could not possibly know the new technologies or have the energy to manage new-generation employees. This is especially true when senior management is under 55. How can someone over 60 battle that perception?

A Dear Over 60: As is true of IT leaders of any age, you must continuously reinforce your value as a strategic contributor to the growth and profitability of the business by creating exciting and compelling initiatives



that have top- and bottom-line impact potential. Don't get bogged down with knowing all the new stuff—a good working knowledge of new technologies will suffice if you leverage it to produce results. As for having the energy to manage high-tech and new-generation employees—do you? And are you cool enough so that they can relate? In other words, are you still a good leader?

Q This is a comment as well as a question on the shortage of IT professionals. What I see is not necessarily a lack of workers but a rapid (hyper) advance in technology that makes skills obsolete virtually overnight. There are many people whose general understanding of hardware and software make them easily transferable to many positions. However, many employers hold off on filling positions, apparently waiting for the "perfect" applicant with experience in the specific new technology. Is this perception accurate?

ILLUSTRATION BY PHILIP ANDERSON

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Where E-Business Begins

Career Counsel

A Dear Perceptive: I am convinced that, as you have noted, many openings go unfilled because of provincial thinking regarding technical experience, more typically at smaller shops that do not, cannot or don't want to cross-train their employees or new hires. But there are also many progressive companies that understand the transferability of good systems and programming skills and eagerly seek talented individuals rather than specific acronyms on resumes.

Q The information technology director has always been a midlevel management position in this \$50 million company of 350 employees. In 2000, a CIO position will be created as a member of senior management. What do you think are the most important issues to ensure the success of the CIO?

A Dear Future CIO: For a CIO to be successful, he or she needs to:

1. Strategically align IT and the IT department's annual and three-year plans with the company's vision and its business plan, goals and objectives. No business plan? No way to measure success!
2. Leverage technology for continuous improvement and cost savings—both within IT and across the enterprise—through operational efficiency, process reengineering and automation opportunities.
3. Leverage technology for competitive advantage by improving ways of delivering your company's products, services and customer care.

Have a career question?

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4. Leverage technology to create new and enhanced revenue opportunities through new products and services, new markets and new channels of distribution. E-commerce anybody?
5. Stay focused on the strategic role as a senior manager of the company, hopefully reporting to the CEO, and don't get distracted by technical issues and fire fighting. Delegate technology and the infrastructure to a trusted deputy or outsource it if appropriate.

Q How can I approach the fact that our IT group needs to move from being under the direction of the CFO to the CEO? What's the tendency on this relationship?

A Dear CFO-Burdened: It is quite clear that those organizations that get it have their IT department report directly to the chief executive officer rather than the chief financial officer. The old model is based on the thinking that IT is simply a service department that plays a supporting role in the operational life of the corporation. Enlightened senior management appreciates and understands that today IT is strategically critical to both operational effectiveness and competitive advantage. In these environments, the CIO is increasingly more often reporting to the CEO and partnering with business unit leaders and other department heads on a peer-to-peer basis. For more insight on this trend, refer to our recent survey, "The Changing Role of the Chief Information Officer," at www.cio.com/forums/executive/kornferry.html.

Q Many of us have careers at Fortune 10 companies as midlevel IT managers. Our responsibilities and salaries rival if not exceed those of CIOs at small and midsize companies. However, these factors alone do not make a CIO. What advice can you give to those of us who want to jump to the position of CIO at a smaller company? What responsibilities should we stress and which should we minimize?

A Dear Jumper: This is the classic career question of big fish in a small pond versus smaller fish in a bigger pond. Many times the grass seems greener on the other side of this issue. So you must be very careful to truly understand yourself and judge whether running your own shop, albeit a smaller one, is a real passion for you, or whether you are better suited by personality, style or other factors for the larger playing field and culture of a bigger shop. Neither option is right or wrong or better, so be true to your own needs and wants.

If being a CIO is your dream, focus on rounding out your experience as much as possible in your current environment. Beyond applications, get involved in infrastructure; and beyond tactical project and problem management, get involved in strategic issues and business alignment. Lastly, remember that there are two ways to become CIO at a major corporation: ascend the ranks of a big company or gain CIO experience at a smaller company and make a lateral move to a larger organization. **CIO**

Mark Polansky is a managing director and member of the advanced technology practice in the New York City office of Korn/Ferry International. The Web-based Executive Career Counselor column is edited by Web Research Editor Kathleen Kotwica. She can be reached at kkotwica@cio.com.



PHOTO BY ANDRE SOUROUJON

Business Intelligence Myth

#2



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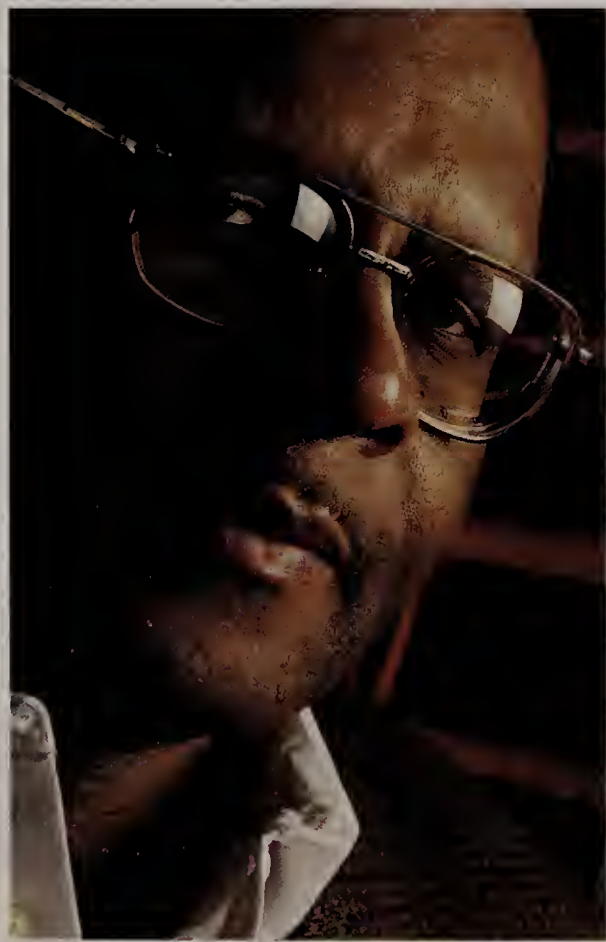
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R. STEVE EDMONSON
CIO and Vice President
R.P. Scherer

The numbers don't lie—
the percentage of
African Americans
in senior management
positions doesn't
come close
to reflecting
their representation
in American society.
What gives?

BY TODD DATZ



CLIFFORD CLARKE
Assistant Vice President
Lincoln Financial Group

ITY



GEORGE WILLIAMS

Senior Sales Executive
TRW



SHEILA TALTON

CEO and President
Unisource Network Services



CARL WILLIAMS

Senior Vice President and CIO
Principal Financial Group

“I have seen in certain situations, although African American men and women and harsher treatment. I know they’re held to with the same sales quotas, and all sorts not making his numbers, but when it should make that number.’ Yet he was,

Perhaps you think the scene described above took place decades ago, before the Supreme Court, Congress and the civil rights movement began to hammer away at the foundations of racism in our society. Wrong.

There’s no way, you whisper, that could happen today in my company. Wrong.

Maybe you shift uneasily in your chair, having observed or heard about that sort of racial incident at one time in your career. It

made you uncomfortable, even outraged, but then your third afternoon meeting came up and you were flying out of town the next morning, so it gradually faded.

Fortunately, egregious examples of racial prejudice in the workplace are much less common than they were 20 or 30 years ago. By all counts, companies are making commendable efforts to diversify and rid their workplaces of blatant discrimination. Midlevel minority executives populate the corporate landscape today in increasing numbers.

But the color of one’s skin all too often plays a role in who gets promoted to senior management.

The numbers are shocking—in a country where African Americans make up 12.9 percent of the population, they make up less than 2.5 percent of senior-level managers in the private sector (see “Undi-

verse Management,” Page 84). But perhaps just as surprising are the barriers that still exist in corporate America, more than three decades after the Civil Rights Act of 1964 outlawed racial discrimination in the workplace. That was a milestone in the civil rights movement, and gave minorities a stepping stone by which they slowly gained entry into the house that white corporate America built. But it didn’t put an end to the de facto segregation that still makes it difficult for blacks and other groups to gain true equality with whites, especially in management.

Sometimes the glass ceiling that blocks minorities from becoming senior-level executives appears practically invisible. Other times the obstacles to upward mobility rear their ugly heads in the form of slights, racial jokes and unfair practices that should make anyone reading this article cringe (see “Raw Deal,” Page 82). If you’re one of those white executives (as are most *CIO* readers), maybe you’ll take a look at a snapshot of your own senior-level officers and ask yourself: What’s wrong with this picture?

Barriers to Advancement In 1991, Congress created the Federal Glass Ceiling Commission to identify the obstacles to minority advancement in business. Among the barriers it uncovered, one stands out: Many corporate leaders perceive minorities differently, and that plays a key role in who gets promoted. The action may be subtle, even subconscious. A white senior executive feels more

the [white executives] try to disguise it, other minorities being dealt a little different standards. I've seen two people of excuses were given for the nonminority came to the minority, they're saying, 'You given the worst territory out there.' ”

—Anonymous Senior IT Executive

comfortable around the white junior executive, who then gets the nod over the minority candidate. Or it may be a fully cognizant decision: The senior executive does not think the minority candidate is the right fit, even though his credentials may be identical to those of a white candidate. In many cases, not being the right fit is a euphemism for racial discrimination.

Hold a frank conversation with a black, Hispanic or Asian executive and odds are most of them will tell you they believe whites are most comfortable promoting whites. Is that surprising? It shouldn't be. Take a look around the room at your next board meeting or the next conference you attend—in most cases, minority faces will be few and far between.

“My biggest challenge has been overcoming initial impressions because I have worked in traditional industries that have had few African Americans,” says George Williams, a senior sales executive in the supply chain solutions group at TRW Inc. in Cleveland and former president of Black Data Processing Associates (BDPA). In a previous job, Williams sold software in the materials handling industry. “I used to feel that being an African American played against me as a sales rep, so when it came down to a comparison, it was not a competitive edge for me. I think it was more of a discomfort on my part knowing I was in a competitive situation and had to be better—much better—than my [white] competition.”

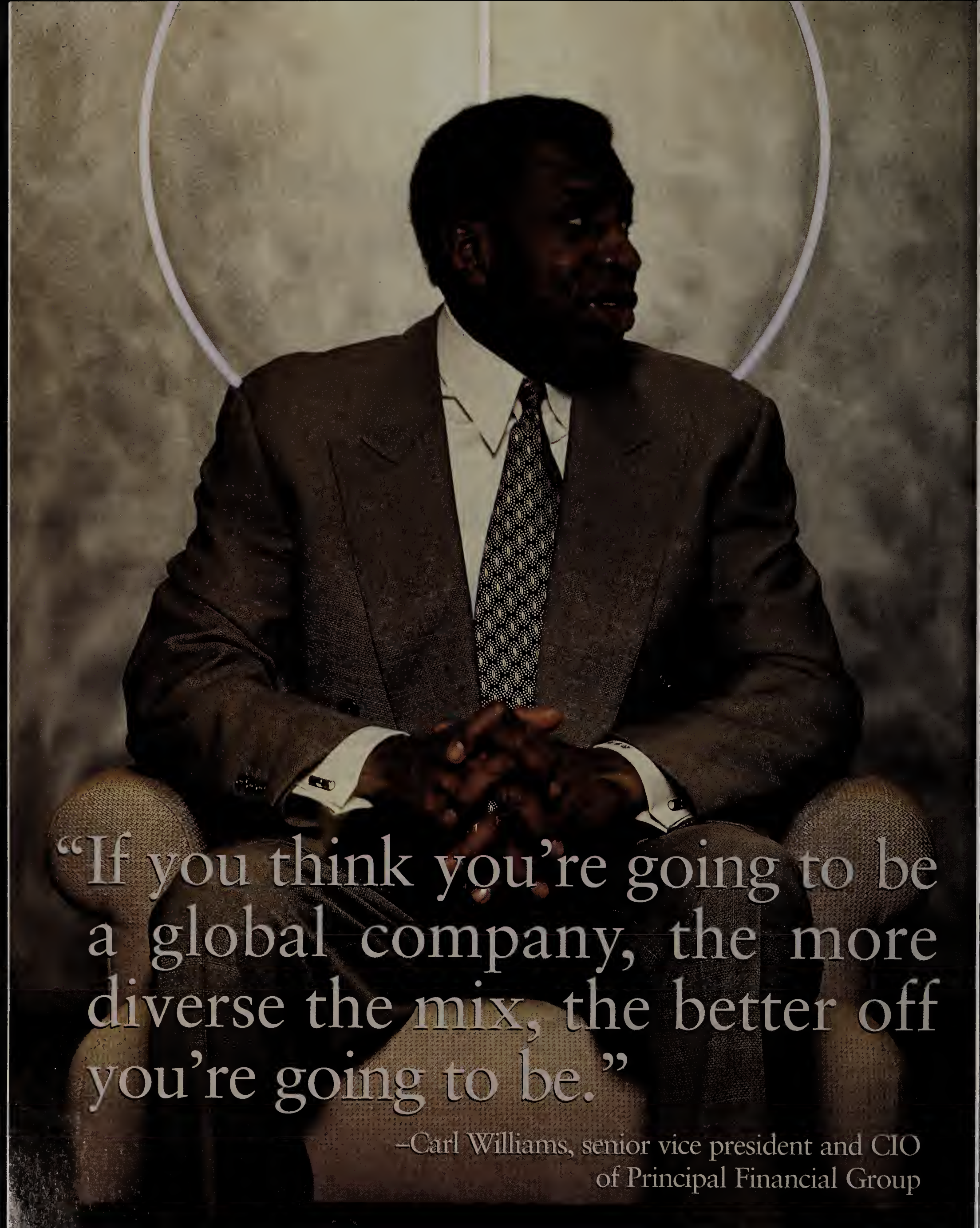
And as much as white executives might be reluctant to admit it,

stereotypes often come into play. “An African American male of large stature with a deep voice might be viewed negatively by a white person,” explains Carl Williams senior vice president and CIO of Principal Financial Group in Des Moines, Iowa. “The [white] person might be intimidated—people are threatened [by that sort of thing].”

“All people have perceptions of what people should look like, be like, to fill senior-level roles,” says R. Steve Edmonson, CIO and vice president of pharmaceutical manufacturer R.P. Scherer Corp. in Basking Ridge, N.J. Carl Williams adds, “It's very simple: Some people are comfortable only when they are bringing people into the environment that look like them, think like them, act like them. A lot of the perception is that ‘I'm going to have a very difficult time dealing with that individual because I'm not comfortable with the person.’ Some people can't get past that.”

Because of these realities, blacks often feel like outsiders. And that's a problem when it comes time to discover the unwritten rules that govern who rises to the clubby, white, senior-executive level.

Harvey Coleman, who left IBM Corp. in the 1970s after crashing into a glass ceiling, has spent the last 20 years trying to decipher these rules. Coleman, a diversity management expert and president of Coleman Management Consultants Inc. in Atlanta, authored a book about the subject, *Empowering Yourself: The Organizational Game Revealed* (Kendall/Hunt Publishing Co., 1996). He says that to successfully scale the ranks of management,



“If you think you’re going to be a global company, the more diverse the mix, the better off you’re going to be.”

—Carl Williams, senior vice president and CIO
of Principal Financial Group

regardless of ethnicity, you must learn the rules and play by them. Many employees can probably offer at least a couple of rules. They may range from the obvious—don't get caught bad-mouthing the boss—to the more idiosyncratic—never shoot a lower score on the golf course than your ultracompetitive boss.

But those rules don't appear in any corporate manual.

Carl Williams gives some examples of those unwritten codes. "Believe it or not, in some organizations it's the way you dress. [Or it may be] showing deference to certain people in certain parts of the organization, for example, Joe Smith, who has been here for 90 years and knows all the skeletons in everybody's closet," he says. Williams also notes the importance of being perceived as a social person, given the value corporate America places on handshakes and conviviality.

Sharon Collins, a sociology professor at the University of Illinois at Chicago, offers additional obstacles that African Americans must overcome in the business world. One is that they are more likely to be labeled as failures if they make errors. "Blacks have to toe the line more and be aware of what's at stake. They get labeled very quickly because they're different," she says. Another barrier blocking blacks' advancement up the management hierarchy: their deployment in "racialized" jobs, Collins' term for positions created during the 1960s and 1970s to deal with African American issues. In her book, *Black Corporate Executives: The Making and Breaking of a Black Middle Class* (Temple University Press, 1997), she writes that many of these jobs—for example, those dealing with the Equal Employment Opportunity Commission guidelines or community relations—are dead ends when it comes to achieving top-level positions. Over time those positions marginalize the skills of the job holders, hurting their chances to compete for top jobs in functions from which most senior decision makers are chosen.

Group Strength How are minorities working to get around these barriers to management, these byzantine rules that can be as difficult to grasp as a feather on a blustery day, or as in-your-face as a round in the ring with Mike Tyson?

Affinity groups allow blacks and other minority IT executives (see "SHPE Shape," Page 80) to make connections that help them grow both personally and professionally. One example comes in the BDPA (www.bdpa.org), which was founded by two African American IT professionals in 1975 to address the low representation of minorities in the computer industry. Today the group has 45 chapters and over 2,000 members in the United States and Canada. One of its major goals is filling the IT pipeline with qualified black executives.

"If you're an African American, you don't have an inside track, a close friend or a relative to help. You have to hit the ground running. BDPA gives you that opportunity," says Clifford Clarke, assistant vice president for annuity operations year 2000 at Lincoln Financial Group in Fort Wayne, Ind. Clarke gained valuable leadership and business skills while serving as president of his local BDPA chapter. "[Being

a BDPA leader] allows you to make mistakes without it being a career-terminating move. In a company, a mistake could cost you your job."

BDPA members also talk glowingly about the networking opportunities available through the organization. Les Pearson, director of information systems quality assurance at the Edward Jones investment brokerage company in St. Louis, landed his present job after attending a recent national conference and having his name dropped to one of the recruiters there.

A BDPA conference is more than just a place to shake hands,



Having been both mentor and mentored, R. Steve Edmonson, CIO of R.P. Scherer, knows it's crucial for blacks to have help understanding white corporate America.

however. At its 1999 annual national conference in Atlanta, which brought together professionals and college and high school students, seminar topics included, "The Role of the OLAP Server in a Data Warehousing Solution" and "Black America and the Digital Economy: Deal Us In!" The conference also hosts an annual high school computer competition and offers technical and professional development workshops.

Will You Be My Mentor? R.P. Scherer's Edmonson knows how valuable mentoring relationships can be. He cites two people who were very influential in helping him advance at different points in his career. At Scott Paper Co., Darwin John, the CIO, served as his mentor; and at AlliedSignal Inc., CIO Kathy Britton White played that role. Edmonson's mentors provided advice and counsel, helped him understand the nuances of corporate politics and provided him with senior-level contacts outside their companies.

The Information Technology Senior Management Forum (ITSMF) is a group of senior-level, African American IT executives who meet regularly to share experiences, to network and to provide sounding boards for one another. The ITSMTF formed seven years ago to mentor up-and-coming African Americans. "We saw a need to assist those folks [who desired] a career in IT and wanted to reach some of their higher objectives," says Carl Williams, one of the group's founders. "It was also formed so many of us could give back to society by volunteering to mentor these young folks."

The ITSMTF mentoring program began last fall. Through an application process, the group chose four midlevel executives and paired them with four senior-level executives. Edmonson's mentee is Lincoln Financial Group's Clarke, who hopes to bounce ideas off of Edmonson, talk about the challenges Edmonson has faced during his career and to get advice as to what professional courses he should take. Another benefit of the mentoring program is that all the participants are African American. Though most of the people interviewed for this article didn't think it was necessary to have an African American mentor, some did appreciate being able to share with members of their own race some of the business world's challenges, whether it be how they reacted to an off-color joke or how they dealt with being passed over for a promotion.

For blacks seeking black mentors in their own companies, however, it boils down to a numbers game. And there aren't many minority executives calling the shots in large companies. Thus, most blacks accept the fact that, more often than not, their company mentors will be white. But finding a willing white mentor can be as frustrating as trying to nab sales help at Home Depot. The harsh truth is that white senior executives are often more comfortable taking other whites under their wings. "Whites tend to be more conservative and



As president of his local Black Data Processing Associates chapter, Lincoln Financial Group's Clifford Clarke got to help other African Americans move up the IT ladder.

to mentor their own, unless there's a star, and that star has to shine pretty bright to become a mentee," says Collins. "Or the white executive has to be brave."

SHPE Shape

The board of directors of the Society of Hispanic Professional Engineers (SHPE) talks about the challenges of being Hispanic American in corporate America

African Americans aren't the only minorities who struggle for equality in the workplace. A conversation with the board of directors of The Society of Hispanic Professional Engineers (SHPE; www.shpe.org), which hosts an annual national conference and provides technology workshops, guest speakers and outreach programs through its 42 professional chapters and over 160 student chapters, reveals the unique challenges Hispanic Americans face.

"Sometimes the mentorship of a Latino isn't there," says Jose Rivera, a project management consultant and president of

SHPE. "Sometimes you're the only Latino voice or face in a division. You may see another Latino only in the cafeteria or cleaning the offices at night. It can be lonely."

"I think that sometimes people perceive you as not being the management type, just because of the stereotype," says Jazmin Jonson, senior software engineer for the Sun-Netscape Alliance and national secretary of SHPE.

SHPE, which was founded in 1974, plays much the same role for Hispanics as the BDPA (see main story) does for blacks. Byron Gutierrez, who works as a project leader at

Sun Microsystems Inc. and is SHPE's national vice president, says, "I didn't even think there was a viable career path in computer science. I was the first person in my family to go to college, so I had little support. SHPE gave me a network."

Rivera encourages companies to recruit at the SHPE national conferences, which are attended by 3,000 to 4,000 Hispanic Americans. "We're the second largest ethnic group in the United States," says Rivera. "SHPE is here to help corporate America help Latinos. We want to help them help themselves." -T. Datz

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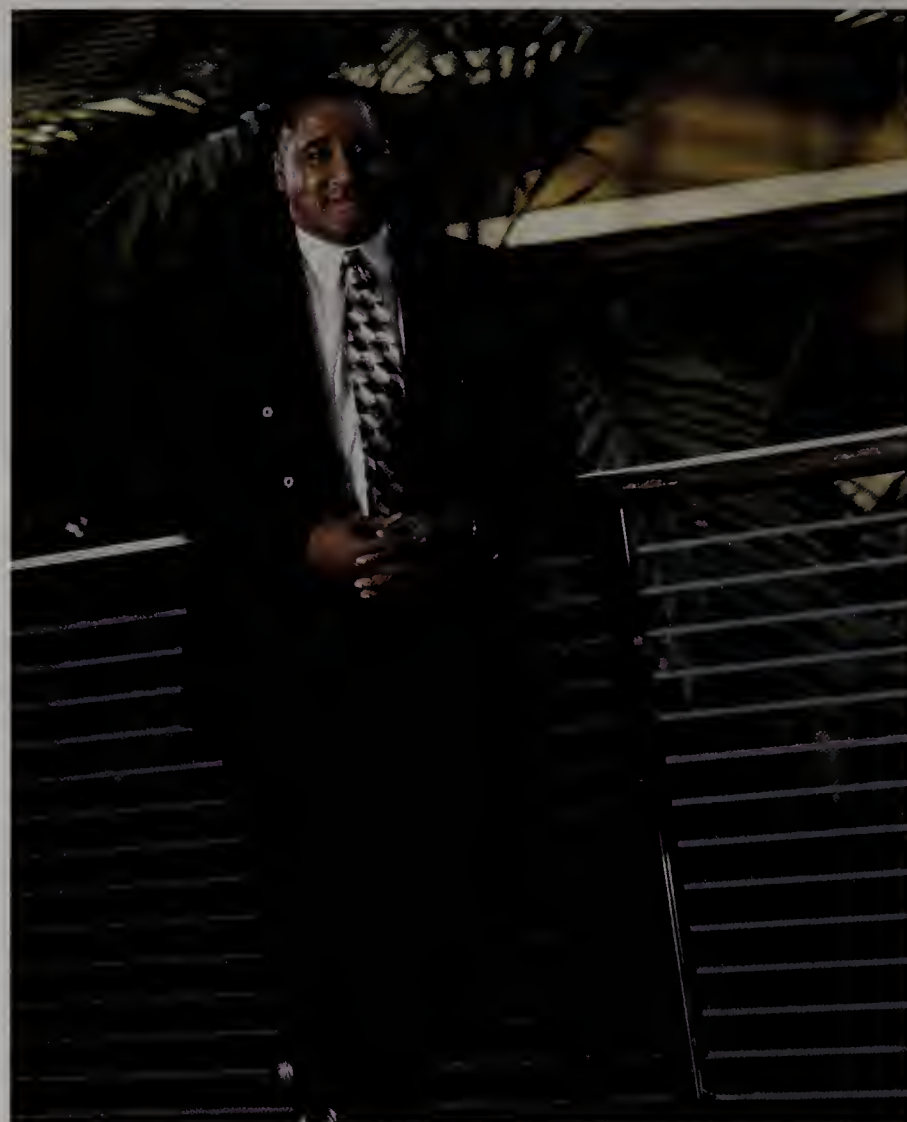
Sheila Talton, CEO and president of Unisource Network Services Inc. in Chicago, thinks white executives tend to have more experience than blacks simply because of their predominance at the top level, but black executives can identify with other blacks better. However, she also notes the added difficulty of being a woman in a predominantly male world. "Guys learn to be buddies with guys. They haven't learned [how to be buddies] with women. The workplace still raises eyebrows if a guy and a girl play golf or go out to dinner."

Diversity Is Smart for Business Whites can—and should—take action to improve the appallingly low representation of minorities in the boardroom. For white executives, it takes determined leadership and a real commitment to bettering those numbers, not just scheduling the annual diversity workshop, then going back to business as usual.

Minorities can also play a role in readying themselves for the big time. Coleman advises up-and-comers to prepare for a mentoring relationship by getting comfortable with the types of activities common in the upper echelons of business, whether it be playing golf, attending the symphony or knowing how to read a wine list. At the same time, it's important to acquire the more traditional business skills, such as learning how to work a room.

Those who empower themselves gain the best chance of climbing the corporate ladder, says Coleman, though he admits that if the someone at the top of the ladder is truly prejudiced, then playing by the rules may be futile.

Collins believes companies should tie recruitment, retention and promotion of minorities to bonus programs. "If they tied money to it, senior executives would do it," she says. Pearson thinks that companies simply need to live by their diversity commitments. A lot of companies are saying, "This is what I want to do." Well, do it."



TRW's George Williams learned from experience that it can be hard for African Americans to get ahead in traditional functions like sales.

And there's a lesser known—but unmistakably tantalizing—benefit of hiring minorities into senior-level positions. It's good for business. Coleman talks about the message a diverse senior management group sends to its minority employees. "It's the visual images [from the executive suite]: 'If I work hard, I might be able to rise to that

Raw Deal

Many senior-level minority executives have experienced some form of racism on the job

Workplace Experience

	Percent of Those Reporting Occurrence	Percent of Those Reporting Being Upset
Observed a double standard in delegation of assignments	59	49
Observed harsh or unfair treatment of minorities by whites	55	52
Personally experienced being the target of racial or cultural jokes	45	38
Personally experienced holding back anger because would have been seen as having a "chip on their shoulder"	44	39
Personally experienced being denied a deserved promotion and suspected it was because of racial or cultural background	40	37

Overall, Asian American men and women reported the fewest workplace discrimination experiences; African American men and women reported the most.

Source: A 1998 Korn/Ferry International/Columbia Business School study

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It's not always easy for blacks to find a black mentor, but Sheila Talton, CEO and president of Unisource Network Services, sees value in both white and African American mentors.

level.' It's role modeling, identification. People of entry level can be more committed to the corporation, which can help productivity."

Carl Williams sees several reasons why diversity in the upper ranks provides business benefits. "It's clear to me that if you think you're going to be a global company, the more diverse the mix, the better off you're going to be. When you go to countries where the majority is Hispanic or non-European, bringing folks in with diverse backgrounds is important. The fact that we can take a diverse group of people into an organization that we're thinking of acquiring or partnering with shows that we take a much broader perspective of the world than the Eurocentric perspective that's predominant here in the United States."

But he notes that the advantage is not only global. "When you talk about the total domestic national product of the Hispanic and African American communities in the U.S., it's grown considerably. It's clear that companies that have those communities represented in their executive suite and their workforce have a better chance to attract business from people in those groups."

Undiverse Management

In a 1995 study, the Federal Glass Ceiling Commission surveyed senior-level male managers in Fortune 1000 industrial and Fortune 500 service industries and found that:

- 97 percent are white
- 0.6 percent are African American
- 0.3 percent are Asian American
- 0.4 percent are Hispanic American

The Commission estimated that African American men and women make up less than 2.5 percent of the top jobs in the private sector.



Finally, if there's a perception in a company that skin color plays a role in who gains entry to the management suite, that company risks losing talented minorities. Why beat your head against a wall when you can walk to Competitor Inc., one of the enlightened companies that is committed to improving the diversity of its management team? That scenario should especially raise a flag to CIOs who spend half their waking hours figuring out how to stem the flow of IT talent from their doors.

But maybe diversity shouldn't have to be reduced to a tangible business benefit, akin to a growing share price, a favorable ROI, an increase in third quarter revenues. Maybe it shouldn't have to appear on the agenda simply because your company recognizes the role a diverse management team can play in appealing to the growing ethnic communities in this country as well as abroad.

Maybe companies should promote hard-working, talented minority executives because it's the right thing to do. **CIO**

Features Editor Todd Datz welcomes your thoughts about workplace diversity at tdatz@cio.com.

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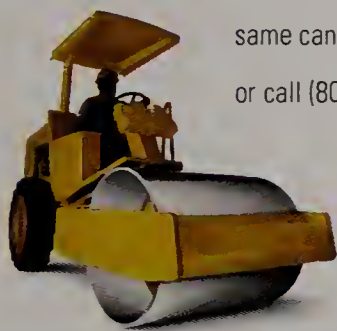
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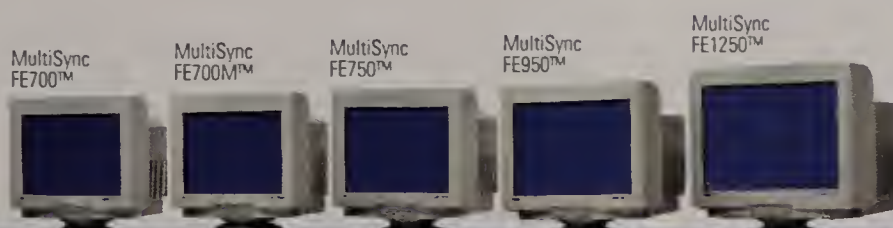
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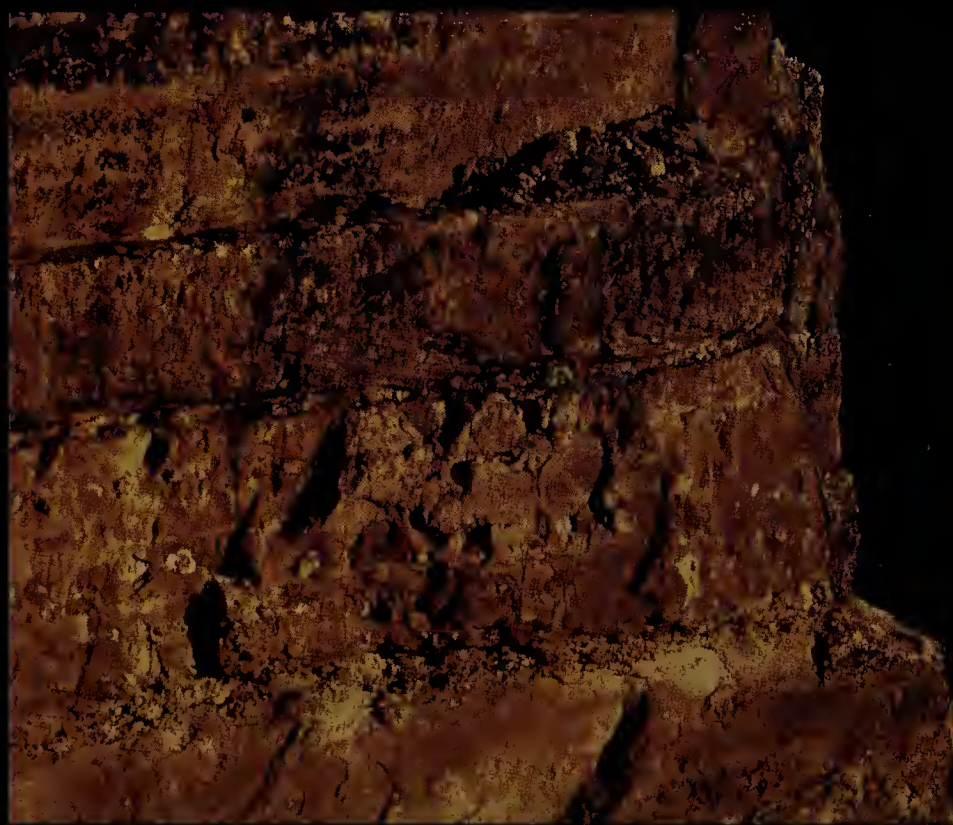
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THE Influence PEDDLERS

Who represents IT interests on Capitol Hill?

*The vendors. And as long as CIOs hold themselves
aloof from the process, that's the way it will be.*

BY TOM FIELD

IN 1999, the Information Technology Association of America (ITAA), an Arlington, Va.-based trade group with a \$6 million annual budget, spent \$1 million to lobby federal legislators and promote the group's political agenda. The number-one issue for the ITAA: Y2K—specifically the Y2K Act, which limits litigation against companies responsible for Y2K glitches. Passage of this bill was a huge victory for the IT vendors that constitute the ITAA, yet a significant setback for their CIO customers who got stiffed by buggy software.

The ITAA is hardly alone. It's one of about a dozen IT industry associations (see "The Players," Page 92) staked out on Capitol

The inside story on

- ▶ The IT trade associations
- ▶ The key legislative players
- ▶ The issues that divide vendors and CIOs



ILLUSTRATION BY DAVID PLUNKERT

Hill, each of them spending millions of dollars annually to affect legislation on behalf of their technology vendor members. Intel Corp., Microsoft Corp., Oracle Corp., Sun Microsystems Inc.—each of these big-name suppliers holds multiple memberships among these groups, sitting on boards and committees, helping draft their political marching orders.

And Y2K is but one of several policy issues these vendor groups have influenced. They were huge players in swaying Congress to increase the quota for H-1B immigrant work visas in 1998, and last year they helped convince the Clinton administration (in a particularly stunning policy reversal) to ease export restrictions on encrypted software.

Now, post-Y2K, lawmakers are finally prepared to debate such hot-button technology issues as e-commerce and intellectual property regulations—issues in which technology vendors and customers alike have vested interest—and no doubt the IT trade groups are primed and ready to be the voice of the vendors.

But who will speak for the CIOs?

CIOs: MIA

In a city where image and influence are everything, CIOs have neither. Their only approximation of a trade association is the Society for Information Management (SIM), a Chicago-based professional group that relies largely on a bare-bones budget and member volunteers. Unlike the IT trade associations, SIM has no significant presence in Washington. And unlike the vendors, CIOs have no visibility with key policy-makers. In fact, one Republican congressman—considered one of the most IT-savvy legislators in Washington—had to ask when contacted by CIO, “What exactly is a chief information officer—the person who manages the computers, or the one in charge of communications?”

Worse than unknown, CIOs are out of touch. “Most [CIOs] don’t have a clue what’s happening in Washington,” says Dr. Leon A. Kappelman, a SIM member and associate professor of business computer

The Top 10 Issues

Here are the hottest IT topics in Washington—and why you should care about them

- 1 Encryption.** The Clinton administration has eased restrictions on the export of encryption software, but only global business leaders—including CIOs—can determine whether the new limits are relaxed enough.
- 2 Y2K.** Y2K liability was a big issue in 1999. This year CIOs must share their millennium successes and setbacks to help prevent such a situation from happening again.
- 3 Taxation.** Whether they work at Amazon.com Inc. selling books to consumers or Dell Computer Corp. selling PCs to businesses, CIOs should be concerned with the question of whether to tax e-commerce transactions. Congress is mulling this issue now.
- 4 Intellectual property.** How does a company like Time Warner Inc. protect its copyrighted material—magazine articles, music and cartoon images—in a digital environment? The Clinton administration advocates market-driven self-regulation, but content providers may want to send a different message to Congress.
- 5 Privacy.** Should government control how financial and health-care institutions transmit sensitive data? CIOs have a vested interest in helping self-regulation succeed or risk seeing privacy standards imposed by Congress.
- 6 Telecommunications.** The Telecommunications Act of 1996 paved the way for open competition in the telecommunications marketplace. But is the marketplace working as advertised? CIOs are in the best position to answer this question for regulators.
- 7 IS staffing.** Congress has raised the quota for H-1B nonimmigrant work visas—good news for high-tech companies that employ foreign programmers. But what about for nontechnology businesses? CIOs across industries must draw attention to their unique recruiting, retention and retraining concerns.
- 8 R&D tax credit.** In 1999, Congress passed a temporary extension to the federal tax credit, which gives a tax break to all companies that avail themselves of IT skills training. Several IT trade associations are lobbying to extend this tax credit indefinitely, but it would behoove CIOs from non-IT businesses to express their support too.
- 9 Information Technology Agreement.** The original ITA helped eliminate foreign tariffs on U.S. high-tech exports. Now industry leaders want to see customs duties eliminated on other IT-driven products, such as telecommunications instruments and some consumer electronics. ITA is quickly becoming a broad business issue that CIOs should weigh in on.
- 10 Critical infrastructure protection.** Government sites aren’t the only targets of electronic terrorists. Public utilities, financial institutions and hospitals are also at risk of hacker attacks. Private-sector CIOs have much to gain—and much to share—from helping government protect critical electronic assets.

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information systems at the University of North Texas in Denton. "We focus largely on internal and industry matters, but we're not paying attention to what's happening in government."

True, the companies CIOs work for belong to their own trade associations, but these groups lobby for their own industry-specific policy issues—health care or tax reform, for example. They leave IT issues to the IT trade groups, which consequently are the only voices many lawmakers hear. Thomas J. Donohue, president and CEO of the U.S. Chamber of Commerce, one of Washington's largest and loudest business associations, believes CIOs can balance this perspective by asserting themselves as the people who know IT best. Can is the oper-

committees. And it works. Among some of the IT trade groups' recent victories:

Y2K. This issue was brought to the federal front burner in 1995 by the ITAA, which established a Y2K Task Force to educate the public and private sectors about the millennium bug, as well as to influence legislation. The ITAA was a key supporter of the 1998 Y2K Information and Readiness Disclosure Act, which forced companies to go public with their Y2K preparedness, and the aforementioned 1999 Y2K Act, which limits post-Y2K litigation. This latter bill was controversial, dividing opinion along IT vendors and customer lines. Of course, in the end, the vendors had roughly a dozen well-financed IT trade associations supporting their stance; the customers had none.

"Most CIOs don't have a clue what's happening in Washington."

—Dr. Leon A. Kappelman, professor of business computer information systems, University of North Texas

ative word; so far CIOs have chosen to keep their distance from Capitol Hill. "[CIOs] say, 'We don't do Washington,'" grumbles Donohue, who doesn't hesitate to label IT executives "arrogant" and "naive" for refusing to get in the game with the issues that affect them. "That's not the way our society is organized," Donohue says, adding, "People who 'don't do Washington' eventually come around."

Vendors in Action

Government, like nature, abhors a vacuum, and in the absence of CIOs, the vendor-driven trade associations have stepped forward to flex impressive muscles. Funded by a who's who of American high-tech vendors, these trade groups employ researchers, marketers and legions of registered lobbyists to focus on political agendas set by their member sub-

Encryption. Although it was the Clinton administration that stepped forward to ease export controls on encrypted software, that didn't come about until years of hard lobbying by the IT trade groups. Arguing that encryption restrictions hampered the global competitiveness of the American software industry, the vendors got backing from Rep. Bob Goodlatte, who built a groundswell of congressional support for his Security and Freedom through Encryption (SAFE) Act of 1999. The SAFE Act subsequently was championed by at least two IT trade groups—the Business Software Alliance and Software and Information Industry Association, both based in Washington and both supported by the likes of Microsoft and Sun Microsystems. Not that the encryption reversal should be construed as a blow against CIOs—indeed, their companies may well benefit from fewer restrictions. But it is a sign

The Players

These major trade and business associations influence IT policy-making in Washington

American Electronics Association

601 Pennsylvania Ave. NW, North Building, Suite 600, Washington, DC 20004; 202 682-9110
www.aeanet.org

Business Software Alliance

1150 18th St. NW, Suite 700, Washington, DC 20036; 202 872-5500
www.bsa.org

Information Technology

Association of America

1616 N. Ft. Myer Dr., Suite 1300, Arlington, VA 22209; 703 522-5055;
fax: 703 525-2279
www.ita.org

PRESIDENT Harris Miller

MISSION The group represents business/government interests of a broad range of IT product and service providers. MEMBERS It includes 11,000 direct and affiliated members—mainly IT hardware and software vendors, including 3Com Corp., AT&T Corp. and Microsoft Corp. ISSUES Encryption and authentication, electronic commerce, intellectual property protection, Y2K challenge and critical information protection; ITAA chartered its Y2K Task Force in 1995, and in 1997 the group was among the first to publicize the IT workforce shortage.

RESOURCES ITAA has a \$6 million annual budget, roughly \$1 million of which goes directly toward funding lobbying activities.

Computer and Communications

Industry Association

666 11th St. NW, Suite 600, Washington, DC 20001; 202 783-0070
www.ccianet.org



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of how the White House can be swayed by the IT power brokers.

IS Staffing. The ITAA again was at the forefront of the effort to publicize the high-tech staffing shortage and affect federal legislation to ease it. In Congress, the ITAA and several other IT trade associations successfully lobbied—twice—to raise the quota of H-1B visas for nonimmigrant foreign workers. While the extra influx of foreign programmers is good for IT suppliers who operate on short-term product development and delivery cycles, it does little to address the needs of non-IT companies that are starving for help recruiting, retaining and reskilling permanent IT staff.

Perhaps the IT trade groups' most visible show of force was a mid-1998 "fly-in" of more than 30 high-tech CEOs (Intel's Andy Grove and Hewlett-Packard Co.'s then CEO Lew Platt among them) to meet one-on-one with key government leaders to discuss three specific issues: Y2K, encryption and Internet taxation. A public relations stunt? Perhaps. But it was a fruitful one—within a year, Congress passed the Y2K Act and a three-year moratorium on new e-commerce taxes, and then the Clinton Administration performed its celebrated encryption flip-flop.

Harris Miller, president of the ITAA, downplays the significance of the lobbying effort on behalf of IT vendors. "Lobbying is another word for education," Miller says. "The media likes to talk about 'buying votes,' as if this were all about back-room politics, but at the end of the day you've got to have intelligent arguments on your side if you're going to sway people."

And yet, as the tobacco and gun industries have proven, a big pocketbook and a persistent message also provide great powers of persuasion. With these capabilities, even the smaller IT trade associations wield great influence over lawmakers. Consider the Information Technology Industry Council (ITIC), a Washington, D.C.-based trade group of just 30 members (the ITAA, in contrast, boasts 11,000 direct and affiliate members). Yet, the ITIC's membership includes HP Co. and Microsoft plus a \$3 million pub-

lic policy budget earmarked for pushing the group's political agenda. Rhett Dawson, president of the ITIC, says big-name members bring instant credibility when it's time to discuss the group's primary e-commerce and intellectual property issues. "We're relatively small, but because of [our members'] size, we have a presence in Washington. They give us a lot more agility, visibility and people on the ground," Dawson says. "I find that if we can get our message and participation together, then we can usually succeed at what we want to do in Washington."

When Worlds Divide

If CIOs quietly support the vendors' positions on such issues as encryption and e-commerce taxation, then, fine, they've got friends in Washington. But what happens when CIOs and vendors disagree?

Such a dispute arose in early 1999, when IT professor Kappelman, representing SIM on the ITAA's Y2K Task Force, came out against the Y2K Act. Unwilling to tie CIOs' hands with litigation limits, Kappelman knew he was going against the ITAA's vendor-friendly grain, yet his minority opinion was tolerated—until he spoke his mind to Congress. After that, he was barred from task force meetings. "They didn't mind if I disagreed privately," Kappelman says, "but as soon as I went public, that was it."

The ITAA's Miller defends the Kappelman ban. "Once he made it clear that he was totally opposed to our strategy, we did what we'd do to any dues-paying member: we excluded him," Miller says. "You can't have the fox invited to the chicken meetings. If we did that, then anything we discussed could potentially end up in *The Washington Post* the next day."

But if it's squelched, then how can the minority voice be heard? This is Kappelman's concern. "The vendors are the only voice; the customer has none," says Kappelman, who fears the ramifications of lawmakers deciding IT issues solely on vendor input. "If the voice they've been hearing tells them [a position] is right, and no other voices

Electronic Industries Alliance

2500 Wilson Blvd., Arlington, VA 22201;
703 907-7600
www.eia.org

Software & Information

Industry Association

1730 M St. NW, Suite 700, Washington,
DC 20036; 202 452-1600
www.siiia.net

PRESIDENT Ken Wasch

MISSION The group represents the business/government interests of the software and digital content industries.

MEMBERS 1,400 software companies and digital content providers; headed by a 23-member board of directors including senior executives from Microsoft Corp., Oracle Corp. and Sun Microsystems Inc.
ISSUES Intellectual property protection, encryption, privacy; big emphasis on software piracy issues.

RESOURCES \$8.7 million annual budget, \$2 million of which goes toward public policy issues; full-time staff of 45; employs nine lobbyists in Washington, D.C.

Electronic Messaging Association

1655 N. Ft. Myer Dr., Suite 500, Arlington,
VA 22209; 703 524-5550
www.ema.org

Semiconductor Equipment and Materials International

805 E. Middlefield Rd., Mountain View, CA
94043; 650 964-5111
www.semi.org

Information Technology Industry Council

1250 Eye St. NW, Suite 200, Washington,
DC 20005; 202 737-8888
www.itic.org

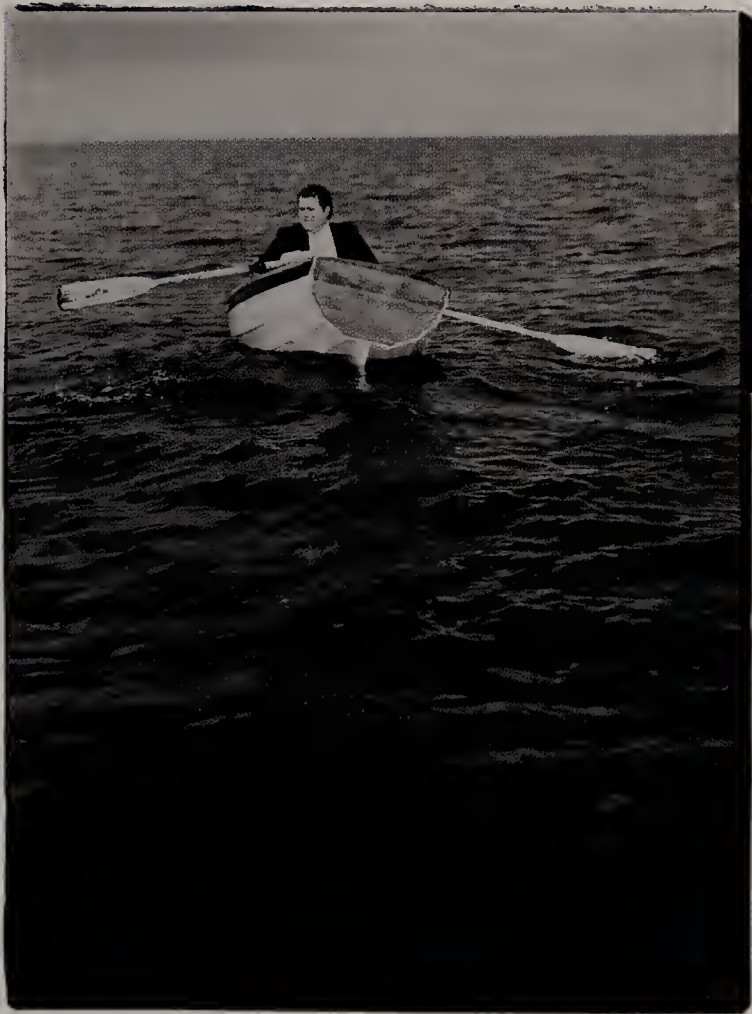
PRESIDENT Rhett B. Dawson

MISSION Represent interests of the nation's leading IT product and service providers.

MEMBERS The crème de la crème of high-tech vendors, including Compaq Computer Corp., IBM Corp., Microsoft Corp. and Xerox Corp. ITI membership claims to have combined worldwide revenues in

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are being heard, then eventually it's going to look right to them."

Opportunities to Influence

As election time nears, Internet regulation, e-commerce taxation and digital privacy will be huge issues among incumbents and challengers. And with these lively debates come prime opportunities for CIOs to be heard.

A good place to start is by talking with

everyone in Congress, some people assume their [spam] will have impact. It won't."

The key to influence is information. To be truly effective, CIOs must keep abreast not just of the latest IT issues, but of how the trade associations are tackling them in Washington. This information is readily available on the trade groups' Web sites (see "The Players," Page 92). CIOs also must offer their own informed opinions, either individually to key lawmakers or through their own business or industry associations. Traditionally, the non-IT trade groups have

As the tobacco and gun industries have proven, a big pocketbook and a persistent message provide great powers of persuasion.

local, state and national legislative representatives. There's a dual opportunity here: a chance for CIOs to express their opinions and to educate legislators about IT issues. Technology is an arcane science to many veteran politicians, who appreciate a little extra help getting up to speed with IT concepts and jargon. "Politicians have absolutely been way behind the times," says Goodlatte, whose own IT education began with his appointment to the House Judiciary Committee's courts and intellectual property subcommittee. "Members [of Congress] are becoming increasingly aware of what the Internet means and how it affects their constituents," Goodlatte says, but given the steep IT learning curve, "there's a much better opportunity today than ever before for people to contact their congressional representatives and be heard."

One piece of advice: limit your overtures to your own representatives; don't send spam e-mail to all 435 House members, saying "I need this." "If you do, then I guarantee 434 people are going to ignore you," Goodlatte says. "If you can't vote for them, then they aren't going to respond. Just because technology makes it easy to e-mail

shied away from IT issues, but CIOs can change that mind-set by getting involved and hammering home IT's strategic importance to business. "There is a massive opportunity for [CIOs] to seize on the idea that the economy is as strong as it is because national productivity is at an all-time high," says Donohue of the U.S. Chamber of Commerce. "Part of that productivity can be directly attributed to the application of technology to business. The tech guys need to be talking about this issue."

Whether CIOs as a constituency can speak loudly and persistently enough to balance what lawmakers are already hearing from the IT vendors is an open question. But the only alternative to trying is to accept being effectively disenfranchised—totally removed from the policy-making process. "Recognize that government is always going to hear from someone on these issues," Donohue says. "And remember, over time the man who pays the piper gets to call the tune." **CIO**

How do you think CIOs can peddle their influence in Washington? Tell Senior Editor Tom Field at tfield@cio.com.

excess of \$440 billion, employing 1.2 million people in the United States and conducting 50 percent of all U.S. IT research and engineering.

ISSUES Global trade is the biggie. ITI championed the loosening of encryption export controls and now seeks to expand the signatories and scope of the Information Technology Agreement (ITA) and ITA II, which seeks to reduce foreign tariffs on U.S. IT exports.

The Technology Network

101 University Ave., Suite 240, Palo Alto, CA 94301; 650 463-1510
www.technetwork.org

Telecommunications Industry Association

2500 Wilson Blvd., Suite 300, Arlington, VA 22201; 703 907-7700
www.tiaonline.org

The U.S. Chamber of Commerce

1615 H St. NW, Washington, DC 20062; 202 659-3190
www.uschamber.com

PRESIDENT Thomas J. Donohue

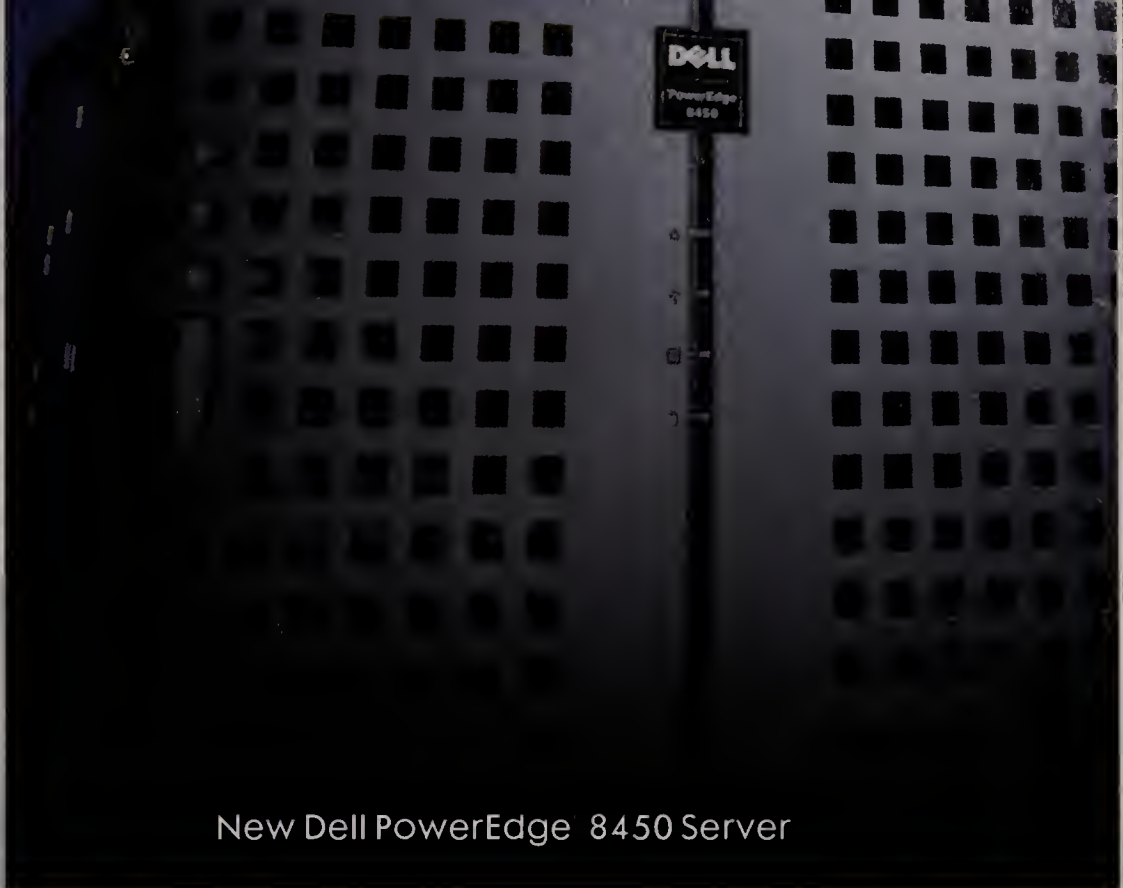
MISSION Represents broad business and political interests of the nation's regional chambers. Or, to quote Donohue: "We take names and kick butt for American businesses around the world."

MEMBERS Include 3,000 state and local chambers, 775 business associations and 85 American chambers of commerce abroad.

ISSUES Easing encryption export controls, preventing frivolous Y2K litigation, preventing new business tax increases.

RESOURCES Annual budget of \$85 million, \$35 million of which is funneled into public policy issues; staff of 850, 400 of whom focus on public policy; employed 17 full-time lobbyists.

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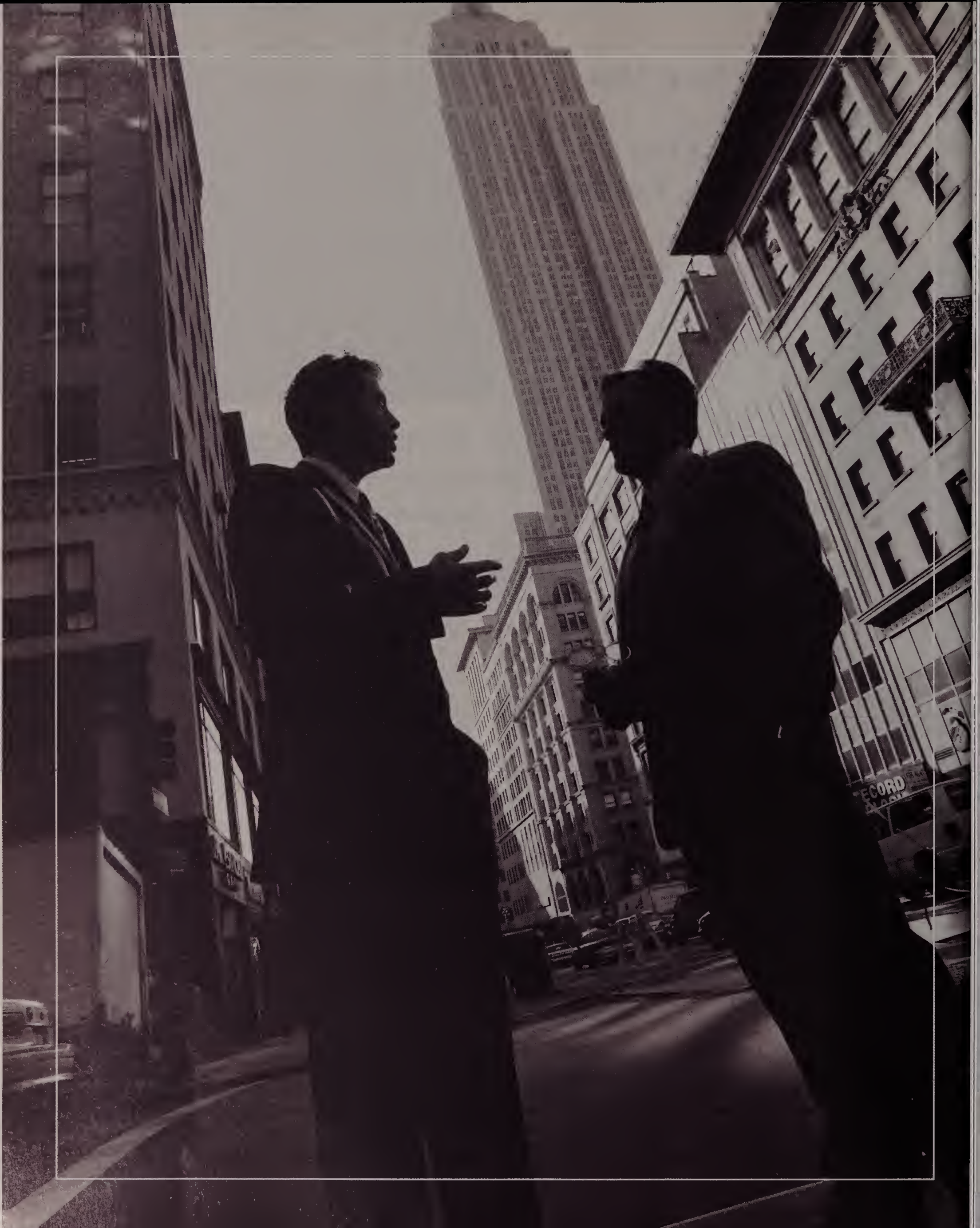
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Virtual Mentor

CIO brings together an IT veteran and a newcomer for a help session on leadership

BY RICHARD PASTORE



John R.

Director of Technology

**A Wall Street Hedge Fund
New York City*

John R. is the Wall Street company's first IT chief. He has a degree in computer science from the University of Maryland and was previously a project manager at American Management Systems Inc. in New York City. When this story was reported, he had been in his new position for six months. John's IT department consists of himself, two staff members and one to six part-time consultants. His department supports 47 employees.

JOHN R.'S BOSSES WANT A LOT. THEY WANT TO have access to trading-oriented information anytime, anywhere. They want him to build the company's fledgling IT department and grow its infrastructure. And the CEO wants John to assist him personally in evaluating potential investment partnerships.

To achieve the first goal of 24-hour access, John's IT group must complete three strategic projects by the end of the year: link trading and accounting systems, create a Web-based marketing system and centralize contact databases.

Pulling this off will require that John manage competing demands for his department's limited resources, finish his projects speedily and remain within budget. Politically, John must walk a fine line between the conflicting expectations of a technology-



Robert Barrett

CIO

*PRI Automation Inc.
Billerica, Mass.*

Barrett is a graduate of MIT's Sloan School of Management. In October 1999, he joined PRI Automation, a global supplier of factory automation systems and software for electronics. Prior to that he served five years as Merrimack, N.H.-based Unitrode Corp.'s first CIO. From 1976 to 1981 he consulted for Index Group of Cambridge, Mass. (now CSC Index), advising CIOs on strategy and planning, and serving clients as interim CIO. Barrett is a member of CIO's Editorial Advisory Board.

*CIO is honoring the company's request for anonymity

aggressive CEO and a cost-focused company president.

CIO asked veteran IT executive Robert Barrett to talk with John about how to handle these familiar leadership challenges.

Divide to Survive

John: Bob, my biggest challenge is that this is a small IT shop, but we have multiple major projects and dozens of smaller distractions to deal with. Not only do I manage, I also like to get my hands dirty with the technology. I'm also assisting the CEO in evaluating potential partnerships for our financial deals. So you can understand how rough it is to stay focused and follow things through because I have all these responsibilities—which I want. But I need to learn to manage things differently, prioritizing and delegating some responsibilities.

Barrett: At every place I've been, one of the first things I've done is separate day-to-day operations from projects. If operations are broken or someone needs something, they assume you can drop everything and get to them right away. If you do that, your projects will never get done.

John: Exactly. Everything is the end of the world.

Barrett: You have only a few people working for you, so it's tough to do it, but somehow you've got to make that separation—either divide your people into support versus projects or somehow divide their time between the two.

It's hard to say on average what amount of time you spend fighting fires. But you need that benchmark to make your case when you need more people and also to determine an acceptable level of responsiveness when things are broken. It's nice to be a hero, to run in and fix things when something's broken, but it's way too easy to lose track of a project because it's not due for another month.

John: You've hit on what I was thinking: having someone as a dedicated help-desk person and systems administrator.

But I probably wouldn't go to the extreme of giving it all to one person. I would take out some time for myself to assist the system administrator. Since it's such a small shop, I have to be involved or the person would be overwhelmed. I like getting my hands dirty on the technology anyway.

Barrett: I like to play with stuff too, but the playing I do now is writing the occasional Web page, not fixing bugs or writing code. The way I express this to my staff is that they are the managers, and it's their job to fix things. My job as CIO is to

VIRTUAL MENTOR is an ongoing series pairing new CIOs with veteran practitioners to discuss leadership challenges. If you'd like to participate in future Virtual Mentor features or provide feedback on these articles, please e-mail Executive Editor Richard Pastore at pastore@cio.com.

break things, to challenge people and move them forward a little bit. I feel for you, John. It's tough to do because you sit there and say, "I can do that better myself. I'm just going to do it." But you've got to force this issue.

John: I understand, especially with my other responsibility of working on partnerships on the financial side. Sometimes you have to pass the ball; that's something I have to become better at.

Barrett: The most important thing you can do is hire the right people and get them trained. Then trust them and give them enough rope to make sure they know what they're doing.

Watch the Clock

John: Part of being with my company is that we want to give back to the community. We donate to schools and nonprofit groups. For example, we donated software to every public school in New York City. One of my IT people had to take a

few days to set that up, and I had to do a software demo of Microsoft Encarta for 300 people. We're excited about doing stuff like that, but it affects our ability to get our projects done. How should I communicate to the executives that we want to be flexible but remind them that we have a job to do?

Barrett: You have to make it clear to your bosses that there's a certain price to be paid, and you have to communicate that message in the right way. One of the things I expect from my divisional managers is that they tell me the truth about their workload. Some people are good at doing that; others are always whining about needing more staff. One manager complained that he was overworked. I said, "OK, get an intern," and I approved the funding to hire one. But he kept coming back to complain, and he never hired the intern because he said he didn't have time to recruit and interview and train someone. I didn't have a lot of sympathy. I said, "You're telling me you will never get out of this hole and, furthermore, you're not willing to try?" Others come in and say, "Listen, I'm going to bust my hump and work real hard to get this done, but I need more staff or eventually we'll run into trouble here." That's more likely to get sympathy from the people who set the budgets.

John: If I had a project plan at the time, I could have documented how much time these charitable projects take away from the strategic projects.

Barrett: That's what I'd suggest. Make sure you have a really good list of all the projects and how you spend your time. Include all the operational tasks and these charitable projects as well.

John: I think having a project plan is extremely important. I used Microsoft Project a lot when I was at AMS.

Barrett: Did it include operational activities?

John: No.

Barrett: That's my point. Often that's the piece that's missing.

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Leadership

John: We definitely should add the operational tasks to the project plan. People send us help-desk requests using Microsoft Outlook. I hope there is some way I can tie that in to the project plan just to show the sheer number of calls we have to deal with.

Barrett: When I came to Unitrode, my people were overwhelmed fighting fires. I said I want to hire a full-time person to work the help desk. My guys freaked out and said, "We don't need another help-desk person, we need another programmer to get the work done." My reaction was, "No, we need a help-desk person so that I can start to measure how long it takes to answer these requests and respond to these fires." That way I can make a case to my managers that we need or don't need more people.

Bulletproof the System

Barrett: We keep talking about operations. At both of the growing companies I went to, we spent a lot of time building the infrastructure and firefighting. When I got to Unitrode, the systems were breaking, literally going down two or three times a day. All people could do was fix things. If you can make that infrastructure bulletproof, it will free you up to do the other stuff. Getting to that stage can require an investment upfront. You tend to think, "Oh, we'll get to it later. We don't have the time to upgrade." But biting the bullet and just doing it will pay for itself in the long run. Also, you should decide whether you need the latest version of the software or can live with the old one. I have people pushing me for upgrades all the time. To me, having us all on the same version is more important than having the newest version.

John: We're running an old version of communications software and it has a consistent bug we haven't been able to fix. But it would cost \$10,000 for vendor support. What else can we do besides upgrade and see if that fixes the bug?



Barrett: I'll push back and say \$10,000 may sound like a lot for support, but it might be worth it just to get that out of your way. It gets back to bulletproofing the operation so that you can get into the strategic stuff. Whether it's fixing a bug or upgrading a version or even supporting it, that's something you really ought to think about outsourcing. I know you're trying to cut costs, but I think you've got to wrap that cost into a project's business case.

John: We do want to cut costs, but we also want to get things done. That's a great idea—make the server software upgrade part of a project.

Barrett: We did it at Unitrode. When we went to the latest version of Microsoft Office and Windows NT and everything else that went along with it, we made it one big project to upgrade everything. Get an outside team to do it, or have your people do it over a weekend.



Make a List and Check It Twice

John: There are some conflicting priorities on our executive committee. Our CEO wants information to be accessible from anywhere, but he hired our president to temper that push. The president wants IT to be a great department, but he wants to keep the budget down.

Barrett: Sounds like you've got two different bosses, John, and I'm not sure that

you have clear agreement on expectations and how to manage in both directions at the same time.

John: Exactly. How do I approach that?

Barrett: I'd go back to that list of projects. Show both of them your projects, who is working on them, the time frame, and lay out the progress you're making. Below that is your wish list—here are all the other things we could be working on, including all the little things that take up

your time. Like the charitable work. Get it all on one list and show it to them often. Every time you talk about priorities, pull out the same list. So when one boss wants to add a project, you say, "Here's my list. Which of these other projects do you want to put lower in priority?" If the other executive wants to cut costs, you say, "Here's what I'm working on; which one do you want to cross out?" That consistent framework helps the CEO and president understand the trade-offs of adding things and taking things away.

John: Sounds like this project plan should be my right-hand man.

Barrett: But you can't wave this list around every time you see someone with a request. You use it just enough to give them the feeling that you are managing against known priorities. There's art in how you do that; how you play the politics. Part of being a manager is getting people to trust you.

Three Weeks Later...

JOHN REPORTS THAT HE HAS INDEED separated operations responsibility from development. He has created a support specialist position, and he is redirecting all help requests to that individual. "I'm getting more distance for myself from the support function," John says. "At first, people were apprehensive, but the support person I designated is doing a great job, and he's responding to people a lot faster than I thought he could have."

This division is already paying off. IT's productivity on the strategic projects has "gone through the roof," John says. And his project plan now includes operational tasks as well as strategic projects. "I've been putting everything I can into the project plan to present to the executives. I even added training for PowerPoint users just yesterday."

CIO will check back with John in a few months for a more in-depth follow-up to accompany the next article in our Virtual Mentor series. **CIO**

Is the gulf the IT and bus in your company as Is alignment a foreign te

technology as a cost center, blind to its strategic possibilities? If any of this sounds familiar, you should read this story. **BY PERRY GLASSER**

N

O PART OF THE FINANCIAL services sector offers more dramatic growth opportunities than the credit card business. The U.S. economy floats on a wave of plastic—in February 1999, consumer debt reached an all-time high of

\$569 billion. Credit card companies are in constant competition to get first to market with any new credit vehicle that will attract the most profitable

between business people wide as the Atlantic? rm? Does your CEO view

customers. That neat trick is best achieved by perfectly aligning IT, operations and marketing, because when it comes to analyzing the demographics of a potential market while handling billions of daily transactions, nothing does the job better than effective IT.

No company knows that better than Capital One Financial Corp., in Falls Church, Va. The consumer lending giant's motto, "The right product, to the right customer, at the right time," translates into: Use IT to invent a product, employ IT to find the customers and market the product at the precise moment customers believe they need it most.

When IT, marketing and operations play well together, the money comes in torrents. (See "Invested Interests," *CIO*, Feb. 1, 1999). At Cap One, revenues have grown at annual rates of greater than 40 percent the last three years.

Marc Cecere, who preaches the gospel of alignment as a vice president at Cambridge, Mass.-based Giga Information Group, defines alignment as "a balancing act of the organizational forces of decision making, leadership, process and reporting relationships." At a properly aligned company, no one on the business side comes up with a bright idea and throws a spec sheet over the

Read this story to learn

- ▶ Why IT, marketing and operations are tightly aligned at Capital One
- ▶ How the company cultivates an alignment culture
- ▶ What qualities Cap One looks for in new hires

IT silo wall with a sticky note that reads, We need this ASAP. Instead, IT is part-and-parcel of the strategic thinking that creates any and all business initiatives. At Cap One, under the leadership of CIO James Donehey, an aligned IT-business culture has thrived. But the success raises a new question. Can tightly meshed alignment con-

"If an organization already exists, people [have been] pre-selected to function in that organization. Alignment is holistic. You can't do a piece here and a piece there. You must do the whole thing." Cecere is a bit less pessimistic about imposing alignment on an existing organization and compares an unaligned organization to an emotionally

"Anyone who wants to be a prima donna gets moved to the edge of the herd out to the long grass."

-JAMES DONEHEY, CIO, CAPITAL ONE

tinue in companies like Cap One that are experiencing rocketing growth? It's one thing to have a perfectly aligned organization when 500 folks are the entire complement, but it's quite another challenge to elicit ideas from all parts of the company when the workforce reaches 14,000 on two continents.

Faced with the challenges of continuing alignment at Cap One in the United States and exporting the alignment philosophy to the company's United Kingdom office, Nigel Morris, president and COO says, "I've never really thought of how to perpetuate alignment. You create it cor-

troubled person: People can change, he points out. The question is, how badly do they want to?

Alignment Training

Donehey is an active participant in the company's Corporate Assimilation Program (CAP). Training at a company where most employees have been on board for less than a year is no occasional matter. Every couple of weeks as needed, 15 to 30 employees at a time go through the CAP for one week of orientation to the business's overall goals and functions, followed by a second week more focused on their own business functions. Donehey talks to all new hires at every level in the company and does not begrudge the hour or so it takes him every two weeks to talk to the CAP groups, even though two-thirds of all new Capital One employees are assigned to the telephone force and are not considered directly part of his IT shop.

During the CAP, employees learn the company's four precepts of alignment, called the Big Yellow Square. It's a training tool, a mnemonic that makes what seems complex simple. The four sides of the square are flexibility, economic judgment, alignment with the business and support for the company culture. Any idea or practice that distorts the square is an idea or practice that is scrutinized and modified by a project or management team. New employees learn to recognize the signs of a misaligned project (see "Are You Aligned?" Page 110). To Donehey, the alignment culture is like an immune system, self-regulating and self-adjusting. "People who don't fit in soon feel ostracized," he says. "Anyone who wants to be a prima donna gets moved to the edge of the herd out to the long grass." Since that's a place where wild beasts presumably have their way with them, trainees understand quickly that learning the four parts of the alignment mantra is in their best interest.

Capital One Financial Corp.

Headquarters Falls Church, Va.

Business Credit cards and consumer loans

Employees 14,000

Net loans (June 30, 1999) \$7.2 billion

Net loans (June 30, 1998) \$5 billion

Annual loan growth rate 45 percent

rectly and forces will allow it to continue and thrive. Otherwise, alignment is destined to be ephemeral. It has to be robust, built into the fabric of the organization." For Morris, alignment, like leadership, isn't something you do, it's something you are. "Members of aligned executive teams just seem able to finish each other's sentences," he says. Ken Cirillo, vice president of risk operations, thinks aligning an unaligned company would be difficult, at best.

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COMMUNICATIONS

Adventure Seekers Need Apply

Capital One's alignment culture also encourages risk taking. In fact, mistakes made in pursuit of a business idea are celebrated. Donehey tells trainees the story of how the chairman of the company, Richard Fairbanks, brought a guy who had led a failed project to the stage for a round of applause for his courage and creativity. "It's OK to make a mistake here," Donehey says. "You just don't want people to make the same mistake twice. We know an employee can't be innovative without [having] an adventurous spirit." In an aligned company, management believes that when people feel free to take risks, their creativity is unleashed. Employees learn to see possibilities for IT, products and marketing to which less adventurous souls are simply blind.

Donehey, himself a motorcycle rider, believes personal risk takers often make the best middle and upper executives. He's hired employees who rock climb and deep dive in open

ocean. But the key question Donehey asks of potential employees is what they do when they aren't working. His favorite answer: I spend time with my kids. "I want people with real lives," Donehey says. "Workaholics are just pre-burnouts."

Cap One President Morris believes aligned people—the polymaths who can understand IT and business—are hard to find and points to CIO Donehey as the key hire that proved the search for special IT personnel can yield the right people. Morris sees the gulf between the typical IT and business personalities as a matter of human nature. He says, "I believe that if left to their own devices, IT and business people will polarize like ends of a magnet because they see the world through different lenses. Business people don't burst into my office shouting, 'Nigel, I have a new technology!'"

To maintain Capital One's alignment culture, Morris wants new hires with passion, energy, verve, intellect and vision. He also likes people who are comfortable with

NEW KID ON THE BLOCK

In her fourth day on the job, a new vice president at Capital One talks about the recruiting experience.

To maintain alignment between the business and IT functions in the face of staggering growth rates, Falls Church, Va.-based Capital One Financial Corp. recently added a new layer of management, a senior business information officer (BIO). The company found Laura Olle and directed her to look across the organization for IT best practices—and ensure those practices were shared among the various business units and ongoing projects in the rapidly growing company.

For eight years, Olle had been at Freddie Mac, the congressionally chartered, independently financed company that makes mortgage funds available to commercial lenders, such as banks. She left there as a senior vice president in business area development in charge of systems development. "I was going to take the summer off and not even look for a new job until September [1999]," Olle says. She was hanging up on most headhunters, but when one suitor mentioned Capital One, Olle was interested. She asked herself, "Can this be as good as it seems?"

Capital One's HR department gave her standardized tests

on logic, vocabulary and thought processes. She also analyzed a series of case studies for managers from the business side, even though she was applying for what seemed to be an IT job. "We'd take a real problem and just talk it through," says Olle. Over a period of weeks, Olle met with somewhere between 15 and 18 people, only six of whom were in IS.

Olle points to her interaction with Nigel Morris, Capital One's president and COO, as the highlight of the process that brought her on board. "We were driving from Washington, D.C., to Richmond, Va., and back. That's three hours in each direction. We talked about his and my business philosophies. He wanted to know the kind of people I'd hire, how I'd manage a team, how I'd manage individuals. I don't know another company where the president spends so much time getting the right people."

First challenges? To learn the acronyms for all the different projects in the works. "I don't think I have to learn the alignment culture—it's a core value to me," says Olle. "There are companies with nice people and smart people," says the newly minted BIO, "but never have I seen a company with so many nice, smart people."

—P. Glasser



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"I believe that if left to their own devices, IT and business people will polarize like ends of a magnet because they see the world through different lenses."

—NIGEL MORRIS, PRESIDENT AND COO, CAPITAL ONE

change, growth and challenges, and who can relate a tale or two from their personal history about recovering from a severe personal setback and what that experience taught them. "I want confident self-starters but not rampant individualists. I want leaders who can grow other leaders." (See "New Kid on the Block," Page 108.)

Handle with Care

That kind of company culture sounds like a terrific place to work for a business-minded IT executive, but Giga's Cecere points out that in large enterprises like Cap One, alignment needs to be handled carefully. For example, while empowering IT workers to make and implement decisions provides flexibility and speed, an alignment

program that empowers different IT groups to make their own decisions runs the risk of redundancy as IT tools, e-mail applications and other utilities proliferate uncontrollably.

Morris cautions executives at other companies that alignment itself may not always be necessary. "If the Holy Grail of IT and business integration isn't as powerful as it is in our business, the effort may not be worth it. If all we did was cram widgets down the line, for example, the use of IT would simply not be as important." Morris, a cofounder along with CEO Richard Fairbanks, advises companies looking to align as solidly as Capital One to start at the top. The consensus among executives at Capital One may be that it is impossible to replace a culture devoted to traditional IT and business relationships, but Morris, who constructed an aligned organization from the ground up, disagrees. He appreciates that "if the CEO doesn't understand the power of information technology, the effort is hopeless." If there is hope in the form of a CEO who does get it, Morris suggests a second step. "After the CEO, galvanize the organization to support the integration and as quickly as possible get rid of people who resist this culture."

Generating that executive team spirit is accomplished through training and financial incentives linked to performance metrics. The top-level executives at Capital One, however, universally believe that good hires respond as strongly to the challenges and pleasures of working with creative and enthusiastic colleagues as they do to T-shirts and barbecues. Morris believes HR's role in perpetuating and growing an aligned company is pivotal because, since alignment isn't a learned condition, HR must find the people who are temperamentally suited. He also suggests the co-location of business functions, putting marketing, sales, operations and IT constituencies side by side, even—heaven forbid—mixing them up cube by cube. The serendipitous opportunities are thereby maximized and no IT person works in a ghetto. In an aligned company, no one is a geek.

In the end, Morris advises executives to remember, "Alignment is a journey and a process; it's not a destination." **CIO**

Are You Aligned?

You know you're in a nonaligned company when...

- Meetings and people are political
- People are not focused on what they can do together
- People hoard information
- People go off by themselves to develop ideas and projects
- There's lots of conversation about how "we need to communicate better"
- There's lots of finger-pointing

You know you're in an aligned company when...

- Your success is a team success
- Peer review is of a 360-degree nature
- The corporate culture values entrepreneurship—spin-offs and risks are encouraged
- Failure is part of a learning process
- People are applauded for sharing what they learned from a failed hypothesis
- There are no rules or hierarchy about idea generation

—P. Glasser

Perry Glasser is a former senior writer at CIO.



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In Europe, U.S. agents have been intercepting e-mail messages for years.

Now they want the computer industry to help them do it here.

BY ART JAHNKE

Intelligence TESTS

IN JULY 1999, A FRONT PAGE STORY IN *The New York Times* lifted the lid on a federal plan to allow government agents to monitor e-mail communications and other information moving across private networks. The purpose of the plan, officials said, was to alert law enforcement agents to possible network attacks that might cripple government operations or the nation's economy.

Privacy advocates, such as those who had sent a draft of the plan to *The New York Times*, warned that the proposed system, which was to be called the Federal Intrusion Detection Network, or Fidnet, could be a first step toward a powerful government surveillance system that could easily undermine civil liberties. Others agreed, and within three weeks Congress deleted the \$2 million in startup money that the White House had requested for the \$1.5 billion project. In the end, Fidnet was not a victim of left-wing privacy freaks

but of a broad coalition of popular forces, including an effort led by Dick Armey of Texas, a Republican representative and House majority leader.

Armey's point man on the issue was aide Richard Diamond, who, two days after *The New York Times* story appeared, helped Armey draft a letter to Attorney General Janet Reno demanding answers. Armey wanted to know the extent to which the government planned to monitor private computer networks; he wanted to know if the government planned to monitor any company that carried general Internet traffic; and he wanted to know how the government intended to ensure the privacy of individuals.

Diamond was pleased, of course, when Congress voted to kill funding for Fidnet; he thought it was a

Find out about

- America's top-secret electronic surveillance system
- The European fear of industrial espionage
- The politics of privacy





dangerous idea, and of course, the political victory meant lots of good press for his boss. But even with Fidnet stalled, Diamond was not persuaded that private corporations and private citizens were safeguarded from government eavesdropping. Like many people with access to the intelligence loop in Washington, Diamond knew about another surveillance system that included the interception of e-mail, cellular phone messages and more. This other effort, organized by the National Security Agency (NSA), was known to many as Echelon, and while it was said not to operate in the United States, it was believed to have been working in several other countries for many years.

Reached by phone after Congress had denied funds to Fidnet, Diamond was happy to discuss his concerns about that proposal. But when asked if he had heard of Echelon, Diamond fell silent, admitting later that what he had heard about Echelon suggested it was every bit as disturbing as Fidnet.

Now, six months after the Fidnet fiasco, debates about the government's role in monitoring information, as well as debates about industry's role in enabling government surveillance, are still swirling through the IT community. Yet the voice of CIOs has been conspicuously absent from the political debate.

"They have been invisible," says Diamond. "Especially considering that this is going to have a major impact on their business, one would think that they would be more involved. Do they really want the administration policing their networks?" (For more about CIOs and public policy issues, see "The Influence Peddlers," Page 88.)

The debate has revealed the dark side of the new economy's electronic infrastructure: the advantages of instantaneous global messaging have come at a price. Today there is no such thing as privacy; no information in any computer on any network is safe.

Unofficially, It's Official

U.S. officials have never acknowledged for the record the existence of the surveillance system called Echelon, but speaking on background, some people with close ties to the intelligence community admit that it is alive and well and operated by the NSA.

"The NSA has an extremely active and very vigorous system of globally targeting communications," says one knowledgeable source. "They use an incredible number of technological programs." The NSA has the capability to capture any sort of electronic voice, fax or computer-to-computer communications.

This government official admits the NSA does conduct what he calls "economic espionage" but claims it does so only to track macroeconomic trends.

In the end, this official echoes the opinion of Army aide Diamond. The official says it is probably true that the spy sys-

tem known as Echelon does internationally many of the same things Fidnet would have done domestically. The fact that Echelon's practices routinely violate European laws, says the source, is of little concern to the U.S. government. "The U.S. government cares only about U.S. laws," says the source. "And there are also," he adds suggestively, "certain agreements between governments," intimating that as far as Echelon is concerned, some European governments are willing to go along to get along.

America, the Villain

Despite the unwillingness of government officials to talk in any detail about Echelon, several histories have been pieced together by journalists and European government agencies. One of the most revealing is a working document that was published in April 1999 by the Directorate General for Research for the European Parliament, an elected body of 626 representatives that makes policy recommendations to European governments. The document, called *Development of Surveillance Technology and Risk of*

Today there is NO SUCH THING AS PRIVACY:

Abuse of Economic Information, makes clear the European perspective on Echelon and similar efforts:

"The United States is behind a worldwide effort to limit individual privacy and enhance the capability of its intelligence services to eavesdrop on personal conversations. The campaign has two legal strategies: The first made it mandatory for all digital telephone switches, cellular and satellite phones, and all developing communications technologies to build in surveillance capabilities; the second sought to limit the dissemination of software that contains encryption."

The document describes the government's efforts to control the sophistication of encryption technology that is exported from the United States, a controversial issue that has been widely covered by the American press. It also delves into the little-talked-about efforts of the FBI to successfully lobby Congress to pass the Communications Assistance for Law Enforcement Act (CALEA) in 1994. That law requires all telephone companies, terrestrial carriers, cellular phone services and others to ensure that all of their "equipment, facilities or services" are interceptable by government agencies. A nearly identical resolution was adopted by the European Union Council of Ministers in January 1995, after four years of pressure from U.S. agencies.

According to the document, Echelon is a global surveillance system designed and coordinated by the NSA and involves intelligence agencies in Australia, Canada, New Zealand and the

United Kingdom. It intercepts e-mail, fax, telex and telephone communications carried by satellites, and has been operating since the late 1980s. Reports claim that the system combs through millions of communications each second searching for key words and phrases, immediately tagging suspect messages and forwarding them to the requesting country. So, for example, the system captures messages with the words *U.S. embassy* or *nuclear threat*.

While in the United States the Echelon system is regarded, if at all, as a bone for conspiracy buffs to gnaw, in Europe, where it operates, it is taken far more seriously. According to the parliamentary document, European business leaders worry that their e-mail and telephone conversations are passed on to corporate competitors in the United States. The document mentions several incidents.

In one case in 1994, the Brazilian government awarded a \$1.4 billion contract to U.S.-based Raytheon Co. rather than to two French companies that had presented better offers. The document contends that Raytheon altered its bid when it learned the details of the French proposals, allegedly through FBI intelligence.

In another case, when the French company Airbus Industrie lost a lucrative contract with Saudi Arabia to the American company McDonnell Douglas Corp. in 1994, the French press re-

“robust law enforcement and intelligence capabilities to protect critical information systems.” To help do that, Fidnet would turn to the people who organized Echelon, the NSA. According to Wayne Madsen, a reporter for the *Intelligence Newsletter*, a Paris-based publication aimed at military and political officials, Fidnet would create a new NSA offshoot called the National Security Incident Response Center.

Madsen reported the plan stressed that NSA cooperation was essential because it was the only agency with the technological expertise required.

Stories like that, which suggest to knowledgeable insiders like congressional aide Diamond that the government was about to set up Echelon at home, made the decision to nip Fidnet in the bud an easy call. But many observers on the left and right believe that Fidnet was just the beginning of government efforts to make the new economy's infrastructure transparent to federal peepers.

They appear to be right. At this moment, for example, the Internet Engineering Task Force, a group established in 1986 to set the standards for the Internet, is in the throes of a debate about whether it should accede to the FBI's wishes that it write standards for the next-generation Internet that will make it easy for federal agents to put wiretaps on Internet communications. The

FBI has stated it hopes the IETF will help wire the Internet in a way that facilitates surveillance, but it is unable to demand compliance because most legal experts believe that the 1994 CALEA

No information in any COMPUTER ON ANY NETWORK IS SAFE.

ported allegations that Echelon had provided McDonnell Douglas with inside information about the Airbus deal.

An American official who claims to be familiar with Echelon says that the Europeans are half right. Echelon does intercept corporate communications, but does so, he insists, only to better track economic trends. The NSA system, he says “does not steal trade secrets and give them to U.S. companies. And they do not spy on U.S. citizens who might be enemies of politicians.”

Meet the New Plan, Same As the Old Plan

It was the potential to spy on U.S. citizens, not just in Europe, but in the United States as well, that ignited resistance to the Fidnet proposal from across the political spectrum. On the right, there was Arme y of Texas. On the left, David Sobel, general counsel to the Electronic Privacy Information Center, a Washington, D.C.-based research center with a focus on civil liberties and privacy. Sobel issued a statement claiming the Fidnet proposal indicates that privacy concerns are being swept under the rug.

The Fidnet plan hoped to, among other things, monitor network activity in telecommunications, banking, transportation and other business sectors for the purpose of maintaining what it calls

legislation does not cover electronic messaging.

The dilemma puts vendors in the uncomfortable position of having to decide if they will make it easy for government agents to eavesdrop on private communications. And not just by U.S. government agents. Because the Internet is a global network, one that is used by people in countries where liberties are nonexistent, the IETF debate goes further than deciding whether the computer industry should help good cops catch bad criminals.

For vendors in any business, this is a tough issue. For vendors in the business of using technology to empower people, not governments, it is even tougher. And for CIOs, who have, according to congressional aide Diamond, remained blissfully distant from the hard questions, it is an issue with potentially serious ramifications. In Europe, the conviction that the United States is policing corporate networks has led to allegations that the FBI has shared critical business information with friendly corporations. And the government's surveillance system in Europe, many observers fear, is coming home soon. 

Former investigative reporter Art Jahnke is now director of Web editorial at CIO. Send your thoughts on privacy to him at ajahnke@cio.com.

Case Files

Furniture.com

With a huge product offering and 24-hour access, Furniture.com hopes to remodel the business of selling furniture

BY ANNE STUART

The Company

Founded: July 1997 as FurnitureSite.com; launched as Furniture.com in January 1998 **Revenues:** Privately held **Location:** Framingham, Mass. **President/CEO:** Andrew L. Brooks **Employees:** 185 **Mission:** Online furniture retailer **Target audience:** Furniture buyers at all price levels **Impact:** About \$1 million per month in orders. **Alliances/Partnerships:** Affiliate program with more than 10,000 members; sponsor of U.S. Postal Service Welcome Kit, sent annually to residents who move; sponsor of Home Enterprises Inc. Haven television program and print publications **URL:** www.furniture.com

From the road, Furniture.com's two-story red brick headquarters resembles any other office building on a strip-mall-studded thoroughfare west of Boston. Inside, it's a different story. The main entrance looks like the front porch of somebody's small-town home, complete with a wooden front door, a shuttered window set into vinyl siding, a mailbox on a post and an inviting hardwood rocker. Scattered among employees' cubicles, visitors might find a plush yellow armchair and footstool, a *Leave It to Beaver*-era dinette set, a French country breakfast table or a set of sleek Italian dining room chairs.

Even the photocopy machine sits on a Colonial-style chest of drawers rather than a standard-issue filing cabinet. True to form, Furniture.com CEO Andrew Brooks says of the decor, "if we don't have nice furniture, who would?"

Furniture.com *does* have furniture. Lots of furniture. But it's not for sale here; these items are just part of the eclectic decor the Framingham, Mass.-based company uses to brief its 185 employees on its newest beds and tables, lamps and rugs, chairs and cabinets. The company actually maintains no showroom and almost no stock. Instead, it sells its wares on the Web, working with manufacturers who ship purchases directly to consumers.

That inventory-less model is at the heart of Furniture.com, a 2-and-a-half-year-old business shaking up both the e-commerce and the furniture industries. It allows the company to offer 50,000 items in a dizzying variety of styles, colors and price ranges—from three to 10 times the amount available in traditional stores, according to industry analysts. And Furniture.com doesn't have to incur costs to store it, display it or move it around.

But executives say that vast selection is secondary to the company's underlying mission: rev-

olutionizing a shopping experience that's almost as stressful and time-gobbling as buying a new car. On average, according to Brooks's research, people in the market for a new couch or coffee table spend several weekends dragging themselves from showroom to showroom, often with kids in tow, comparing prices and collecting swatches, before deciding what to buy. "People dread the process," says Brooks. "Halfway through,

they just start to surrender."

Furniture.com is based on the idea that it just shouldn't be that hard to find the perfect couch or a bedroom set. To that end, its Web site offers tools, live online assistance and thousands of pages of content to help customers find the perfect piece.

Both investors and customers seem impressed. Furniture.com raised more than \$50 million in three rounds of funding and

had 722,000 unique users during September 1999, according to Media Metrix. (Furniture.com will not disclose the number of registered users.) Officials of the privately held company say sales increased from about \$900,000 for the whole fourth quarter of 1998 to \$1 million per month by mid-1999. They declined to provide more recent sales figures, saying only that the company expects to continue increasing its slice of the \$178-billion annual U.S. furniture market.

But one Furniture.com policy has already drawn fire: When customers return purchases, they receive only an exchange or a store credit. Company officials defend the no-money-back policy by saying Furniture.com does everything possible to satisfy customers: offering 24-hour help, sending fabric and leather swatches upon request, providing free delivery and offering optional extended warranties that cover almost everything short of a nuclear war. And the company does let customers exchange merchandise without charging the usual return-shipping costs or restocking fees. However, some analysts still believe the company should provide money-back refunds as well (see "Room for Improvement," Page 118).

Unlike many online retailers, Furniture.com isn't technically a startup. It began 50 years ago as the family-owned Empire Furniture Showroom in downtown Worcester,

"It's matchmaking, really. We're creating a marriage between the customer and a perfect piece of furniture."

-ANDREW BROOKS, CEO, FURNITURE.COM



Mass. By the mid-1990s, the retailer was doing business out of an old mill building with no air conditioning, insufficient heat and three toilets for 90 employees. In 1997, store owner Steven Rothschild and a partner, Misha Katz, launched the first iteration of their business, FurnitureSite.com, from the brick-and-mortar store.

The urban location wasn't great for business either offline or online. Broken glass littered the streets; drug addicts hung out in front of the building. "We had local bankers come once and their tires got slashed," recalls Brooks, who came on board in 1998. "We would have job candidates who would call [from their cars] and say 'I'm going to keep on driving'" after they saw the neighborhood.

In early 1999, after simplifying the name to Furniture.com and moving to its suburban offices, the company closed the brick-and-mortar business and converted the old showroom to a photo studio for creating furniture groupings shown on the site. Furniture.com maintains a warehouse nearby for returns.

Rothschild is now company chairman; Katz is vice president of new technology.

CEO Brooks acknowledges he isn't a furniture specialist. "I'm a consumer guy. I love building consumer businesses," he says. His previous gigs include heading the Channel One online and TV network for teens and serving as general manager of BMG Direct Canada, a mail-order music business. Jumping from entertainment to furniture isn't that big a stretch, he says. "What I loved about marketing music was the ability to leverage that feeling that people get after they listen to music. Similarly, the home, and everything the home represents, is emotional."

But when it comes to the two kinds of relationships that make Furniture.com work, Brooks is all business. First, there's the company's network of suppliers. If, for instance, there's sudden interest in moderately priced, queen-size, Mission-style bedroom sets, Furniture.com wants them available in a hurry. "You have to work with manufacturers who believe in [the business model], manufacturers who can scale with you, manufacturers you can depend on," Brooks says. "We have

CRITICAL ANALYSIS BY MARTHA FREY

Room for Improvement

The online furniture shopping experience is compelling in many ways. On the Web, consumers can shop anywhere, anytime, without the penalty of tired feet. The new model does not offer lower prices, but it does offer convenience accompanied by competitive prices. In addition, the new model offers a wider selection of products than most brick-and-mortar retailers.

Furniture.com sells 50,000 items (an item is an individual product such as a specific couch in a specific color in a given fabric) from 150 manufacturers. Generally, small to midsize furniture stores offer 3,000 to 5,000 items, and midsize to large stores offer 8,000 to 12,000 items. In addition to presenting a wide selection of furniture, the new business model offers real-time, online help from expert design consultants and online planning tools to help shoppers choose an item.

But what happens if the customer doesn't like the piece of furniture after it arrives? Here is where this particular business model breaks down.

Furniture.com pays the return shipping fees, on a one-time exchange basis, and issues a store credit. In other words, the company's business model does not provide cash refunds. This policy is in effect because of the high cost of processing furniture returns.

Is a 100-percent money-back satisfaction guarantee required to sell furniture on the Web? Yes. Offering only merchandise credit on returns, as Furniture.com does, is a problem, because it does not make the process of buying furniture on the Web any easier. The leap of faith that is required to buy furniture without testing its craftsmanship and comfort is great even with a customer-friendly return policy. Without a money-back satisfaction guarantee, the Furniture.com business model lacks vigor.

Furniture.com is not alone in its return policy. Living.com accepts merchandise exchange within seven days but won't refund the purchase price. Such limited return policies won't lead to long-term customer satisfaction.

However, some online furniture-sellers offer more customer-friendly return policies. BeHome.com and Furniturefind.com both offer exchange, store credit or a refund (minus a 10 percent or 15 percent restocking fee respectively) within seven days. But unlike Furniture.com, both companies require customers to pay return shipping charges.

On the other hand, many brick-and-mortar furniture stores offer money-back guarantees. For example, Crate and Barrel, Levenger and Room&Board all offer customers the option of receiving either cash or store credit on merchandise returns. These companies limit their financial risk by charging customers shipping fees on furniture returns.

A 100-percent money-back satisfaction guarantee is required for a sustainable e-tailing model. Without a money-back return policy, the Furniture.com business model does not meet customers' expectations for a satisfactory shopping experience. Sooner or later, Furniture.com and other online furniture purveyors should realize that certain things don't change just because the venue for doing business changes.



Martha M. Frey is a senior consultant and analyst with the Boston-based Patricia Seybold Group, specializing in e-commerce and Web merchandising. She can be reached at mfrey@psgroup.com.

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severed relationships with suppliers because they couldn't meet demand." Furniture.com also partners with more than 10,000 affiliates—other Web sites that share in the profits anytime a customer registers with or purchases from Furniture.com through the affiliate's site.

At least as important, of course, are the customers. Furniture.com knew it needed to overcome buyers' natural desire to see and touch the items they may be sitting on or eating around for a long, long time. To that end, the company offers Personal Shopper, a free service connecting customers with online design consultants. Customers log in, answer questions about styles, colors, room size and budget, then submit the form to Furniture.com. The company's design consultants find pieces that fit the bill, move their images and descriptions into a private online "showroom," then e-mail the customer an invitation to come view them.

Other online tools include Room Planner, which lets customers create a floor plan for rooms they're furnishing. With a mouse click, they can add or delete items, move them around, or change the fabric, finish or color. They can save their blueprints for later or e-mail them to somebody else for feedback. Once they find the right combination of furniture, they simply click to buy. They can also check to see whether items are in stock or look up fact tags with information such as country of origin, type of construction, recommended care and more.

The company sends swatches by request and provides 24-hour customer service by live chat, e-mail or telephone. Furniture.com also offers free in-home setup, and service continues after delivery: reps call customers

Crowded House

At least 50 e-commerce sites sell home or office furniture, mattresses and accessories. Major contenders include:

FurnitureFind.com

Buchanan, Mich.

www.furniturefind.com

Launched in 1996, this company now offers 75,000 home-furnishing items and serves as the exclusive content provider for Microsoft Corp.'s HomeAdvisor.

GoodHome.com

San Rafael, Calif.

www.goodhome.com

This online-only retailer made headlines when it merged with a potential rival, nHabit.com, before either had actually launched. The combined company launched in September 1999. Its iDecorate technology lets customers mix and match fabrics, and other items.

HomePoint.com

(previously FurniturePoint.com)

Greenville, S.C.

www.homepoint.com

Launched in December 1998, HomePoint most recently began offering bilingual customer service representatives to serve Spanish-speaking customers.

Living.com

Austin, Texas

www.living.com

Launched in July 1999, this company uses Oracle applications similar to those at Amazon.com and E-Trade.

after they've lived with their new lamp or end table for a few days to make sure they got what they ordered.

"It's matchmaking, really," Brooks says. "We're creating a marriage between the customer and a perfect piece of furniture."

For at least two customers, that's ultimately what happened. Ruthy Ross of Duvall, Wash., found Furniture.com after spending six months looking in brick-and-mortar stores for a bed for her 3-year-old daughter. "I felt it was a risk buying it off the site, but I also had confidence in their guarantee," Ross says, referring to Furniture.com's exchange policy. She was so confident, in fact, that she ordered a sleeper sofa for her guest room as well. The bed arrived as scheduled. When the sofa didn't show up, Ross made one phone call and sent one e-mail to Furniture.com. In response, she says, customer service representatives located her sofa at a manufacturer's warehouse and gave her a new delivery date. That time, the sofa arrived as promised. "They handled it very efficiently," she says. She has since ordered an office desk from the company.

When Scott and Adria Silverman bought a new condominium in Surfside, Fla., they spent about two months looking for a particular entertainment center constructed with storage drawers on the side. "We literally went to every furniture store in South Florida," Scott Silverman recalls. After finding Furniture.com via a search on Yahoo, he looked through its entertainment-center offerings and instantly found what he wanted. His order arrived on schedule several weeks later. "It's just absolute convenience," Silverman says. "If we had just gone to Furniture.com in the first place, we would have saved not just hours, but days." **CIO**

Anne Stuart is a former senior editor at CIO.



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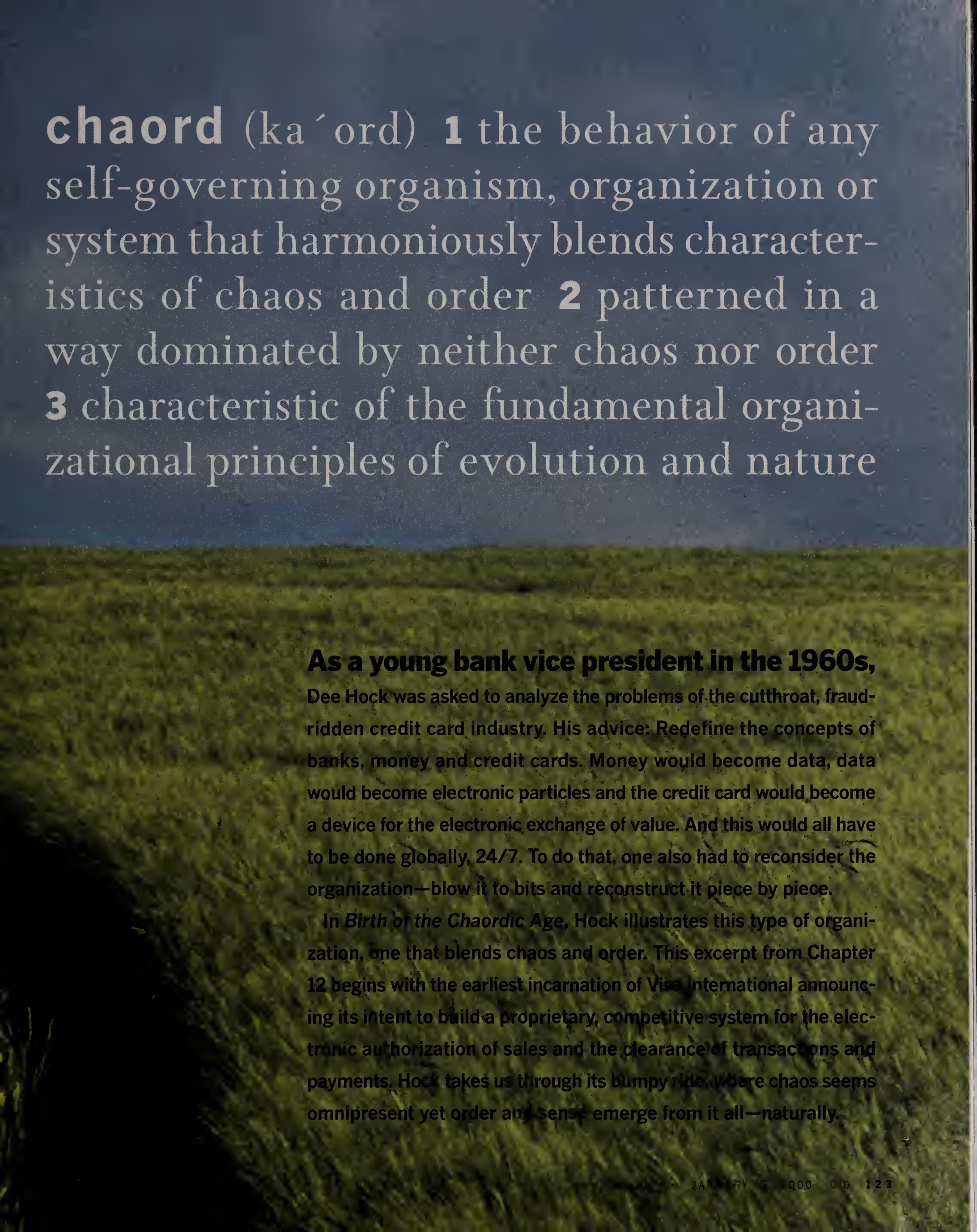
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Back to Nature

In this new book, the founder of Visa International offers us the history of a “chaordic” company and challenges us to rethink our long-held beliefs of organizational structure

BY DEE HOCK



chaord (ka´ord) **1** the behavior of any self-governing organism, organization or system that harmoniously blends characteristics of chaos and order **2** patterned in a way dominated by neither chaos nor order **3** characteristic of the fundamental organizational principles of evolution and nature

As a young bank vice president in the 1960s,

Dee Hock was asked to analyze the problems of the cutthroat, fraud-ridden credit card industry. His advice: Redefine the concepts of banks, money and credit cards. Money would become data, data would become electronic particles and the credit card would become a device for the electronic exchange of value. And this would all have to be done globally, 24/7. To do that, one also had to reconsider the organization—blow it to bits and reconstruct it piece by piece.

In *Birth of the Chaordic Age*, Hock illustrates this type of organization, one that blends chaos and order. This excerpt from Chapter 12 begins with the earliest incarnation of Visa International announcing its intent to build a proprietary, competitive system for the electronic authorization of sales and the clearance of transactions and payments. Hock takes us through its bumpy ride, where chaos seems omnipresent yet order and sense emerge from it all—naturally.

THE FOLLOWING MONTHS WERE AMONG THE MOST EXCITING IN THE history of the company. We were determined the needs of our members and cardholders would be served, not the needs of technology or vendors. That required internal responsibility. We decided to become our own prime contractor, farming out selected tasks to a variety of software developers, then coordinating and implementing results. Conventional wisdom held it to be one of the worst possible ways to build computerized communications systems.

We rented cheap space in a suburban building and dispensed with leasehold improvements in favor of medical curtains on rolling frames for the limited spatial separation required. IBM, then the infallible behemoth of the computer industry, was the supplier of computers to 80 percent of our members. Early in the process, as we had prepared the proposal to the board, IBM had promised a quarter-million dollars of support in connecting members to the system. Now they waffled, saying only that they would see what they could do when the time arrived. We threw them out, telling them not a single piece of IBM equipment would come through our doors in the future, not even a typewriter. We selected a relatively new, then innovative company, Digital Equipment Corp., which we believed would be more responsive to the spirit of our people, to provide our computers.

THE DIRTY COFFEE CUP SYSTEM

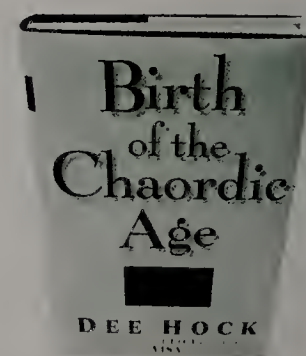
SWIFTLY, SELF-ORGANIZATION EMERGED. AN ENTIRE WALL became a pinboard with every remaining day calendared across the top. Someone grabbed an unwashed coffee cup and suspended it on a long piece of string pinned to the current date. Every element of work to be done was listed on scraps of paper with the required completion date and name of the person who had accepted the work. Anyone could revise the elements, adding tasks or revising dates, provided they coordinated with others affected. Everyone, at any time, could see the picture emerge and evolve. They could see how the whole depended on their

work, and how their work was connected to every other part of the effort. Groups constantly assembled in front of the board as need and inclination arose, discussing and deciding in a continuous flow; then dissolving as needs were met. As each task was completed, its scrap of paper would be removed. Each day, the cup and string moved inexorably ahead.

Every day, every scrap of paper that fell behind the grimy string would find an eager group of volunteers to undertake the work required to remove it. To be able to get one's own work done and help another became a sought-after privilege. Nor did anyone feel beggared by accepting help. Such Herculean effort meant that at any time, anyone's task could fall behind and emerge on the wrong side of the string.

Leaders spontaneously emerged and reemerged, none in control, but all in order. Ingenuity exploded. Individuality and diversity flourished. People astonished themselves at what they could accomplish and were amazed at the suppressed talents that emerged in others.

Position became meaningless. Power over others became meaningless. Time became meaningless. Excitement about doing the



Birth of the Chaordic Age

By Dee Hock

Berret-Koehler Publishers Inc.
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impossible increased, and a community based on purpose, principle and people arose. Individuality, self-worth, ingenuity and creativity flourished; and as they did, so did the sense of belonging to something larger than one's self, something beyond immediate gain and monetary gratification.

No one ever forgot the joy of bringing to work the wholeness of mind, body and spirit; discovering in the process that such wholeness is impossible without inseparable connection with others in the larger purpose of community effort. Money was a small part of what happened. The effort was fueled by a spontaneous expansion of the nonmonetary exchange of value—things done for one another without measurement or prescribed return—the heart and soul of all community. People discovered that any receiving worthy of the name is an

inexorable product of giving. A few who could not adjust to the diversity, complexity and uncertainty wandered away. Dozens volunteered to take their place. No one articulated what was happening. No one recorded it. No one measured it. But everyone felt it, understood it and loved it.

No one replaced the dirty string and no one washed the cup. The Dirty Coffee Cup System became legendary—a metaphor for the company for years to come. The system came up on time, under budget and exceeded all operating objectives. Out of initial failure grew a magnificent success. It forced the industry to abandon notions of natural monopoly, to innovate and create other systems. It was a foundation of commitment and practice from which the global Visa communication system evolved.

I CONTINUED TO EXPLORE THE SIGNIFICANCE OF INFORMATION IN THE FORM OF ARRANGED particles of energy, trying to get at the essence of its ultimate meaning. By then, peeling such a mental onion by asking hundreds of layered questions was not only habit, it was recreation. In time, a new perception gradually emerged, based upon trying to understand the history and effect of a single, fascinating capacity: the Capacity to Receive, Utilize, Store, Transform and Transmit Information (CRUSTTI). Not information from the common misperception of alphanumeric data, but from Gregory Bateson's [an English-born anthropologist and educator] perspective that "information is a difference that makes a difference." If something perceived cannot be distinguished from its surroundings in a relevant way, it's just noise. If it can be differentiated and truly makes a difference, then it becomes *in-formation*. It is capable of *in-forming* us, forming us within and allowing us to formulate differences that can make a difference to others.

In a very real sense, one can think of new information as boundary acid. It dissolves old boundaries and creates the conditions for new patterns of relationships to emerge. To understand CRUSTTI, it is essential to begin at the beginning.

If one is to examine early examples of single-celled life, it is apparent they possess the capacity to receive, store, utilize, transform and transmit information. In fact, this capacity precedes even such simple life forms, for it is the very essence of DNA. It even precedes DNA, for when physicists attempt to examine the smallest known particles, the particles change their behavior. And when they do, the physicists change their behavior in response. Particle and physicist find themselves in a fascinating, quantum, cosmic dance. Clearly each is perceiving a "difference that makes a difference." They are exchanging information.

In ways we don't begin to understand, information escapes particles, transcends them and binds them together into more complex systems in which all particles constantly exchange information. It seems a principle of evolution, perhaps the fundamental principle, that the greater the capacity to receive, store, utilize, transform and transmit information, the more diverse and complex the entity. It holds true from neutrino, to nucleus, to atom, to amino acids, to proteins, to

molecules, to cells, to organs, to organisms. From bacteria, to bees, to bats, to birds, to buffalo, right on through to baseball players.

CRUSTTI didn't stop there. In time, information transcended the boundaries of organisms and led to communication between them. Whether the dance of the bees, the pheromone of ants, the sonar of bats, the song of birds or the language of people, once that capacity transcended organisms, there was immediate evolution of complex communities of organisms—hives, flocks, packs, colonies, herds and tribes.

Let's follow that capacity with respect to our species. Throughout history, many of our finest minds have argued that the two characteristics that most distinguish the human species are memory and language. Memory, the ability to store and recall images. Language, the means to share those images. Over the centuries, we have ascended a ladder of diversity and complexity. With language, information escaped the boundaries of a single mind and experience became shared. Immediately, there was a corresponding leap in societal diversity and complexity. With written language came expansion to that which could be manually recorded and personally transported. Another leap in capacity, another leap in societal diversity and complexity.

Leap followed leap, each exponentially greater and more frequent. With mathematics came expansion to that which could be commonly understood by means of a global language. With the printing press came expansion to that which could be mechanically recorded and transported. With the telegraph came electronic alphanumeric capacity. With the telephone came phonic capacity. With television came visual capacity, followed by multimedia capacity.

One could paraphrase Einstein's most famous equation and say that where "I" equals the capacity to receive, store, utilize, transform and transmit information, "D" equals societal diversity and "C" equals societal complexity, the equation is $I=DC^2$, or the capacity to receive, store, utilize, transform and transmit information equals societal diversity times societal complexity squared.

Then it happened! Suddenly, with the revolution in microelectronic technology, in less than 20 short years, we have on the order of a thousand times better algorithms, 500,000 times more computing capacity per individual and 500 million times more mobility of information. All known and recorded information, the entire collective memory of the species, will soon be no more than a few keystrokes away. Software to navigate that immensity of information is rapidly emerging. We don't begin to understand the significance of all this, let alone the societal change unleashed or the institutional change it demands.

But that is nothing compared with what lies ahead. Around the corner are other revolutions of enormously greater significance, such as nano- and biotechnology. Simply stated, nanotechnology is the engineering of self-replicating assemblers and computers so tiny they can manipulate atoms, the basic building blocks of nature, as though they were bricks. The necessary science has already been discovered. What remains to be done is the engineering of tools at the atomic scale. In his book, *Engines of Creation: The Coming Era of Nanotechnology*, K. Eric Drexler, a pioneer in the field, writes: "When biochemists need complex molecular machines, they have to borrow them from cells...advanced molecular technology will eventually let them build nanocircuits and nanomachines as easily as engineers now build microcircuits or washing machines."

In answer to the question, "What could we build with these atom-stacking mechanisms?" Marvin Minsky, MIT professor, writes: "We could manufacture assembly machines much smaller even than living cells...make materials stronger and lighter than any available today, hence, better spacecraft, hence, tiny devices that can travel along capillaries to enter and repair living cells."

The possibilities are profound. Efficient solar collectors durable enough to repave highways and parking lots or to surface buildings. The ability to create large structures onsite swiftly at little cost from material as common as dirt and air by arranging atoms into a desired object. Even more important, the deconstruction into atoms of garbage, industrial waste and atmospheric pollutants, thus turning them into abundant, cheap, raw material.

NATURE DOES IT ALL

HERE IS NOTHING NEW IN ALL THIS. IT IS THE FUNDAMENTAL technique that nature has used to create everything since the beginning of time. Information in the form of DNA is endlessly replicated at no cost and distributed in seeds. A process of replication driven by the power of the sun begins. Molecules and cells assemble on the spot into known patterns from atoms of surrounding air, soil and water. In the case of animals, it happens not only on the spot, but on the move. When such creations are no longer viable, nature breaks them down into atoms once again for recreation into something new and useful—a never-ending, effective, nonpolluting chain of events of ever-evolving diversity and complexity. No factories, no waste, no despoiled resources, no pollution, no mechanistic organization, and no command and control. Nature does it all with chaordic organization—a complex, diverse flow of information that chaordically mobilizes physical materials into both animate and inanimate forms.

How soon and how likely are such things? One need only remember that a few decades ago the atomic bomb was scarcely a theory, travel to the moon a fantasy, television the dream of a few odd engineers, a plastic card for the global exchange of value unthinkable and genetic engineering securely locked up in the secrets of DNA. Yet none had a better theoretical or scientific foundation than do nanotechnology or biotechnology today, and none were being driven by the incredible forces of change now common throughout the world. As microtechnology builds down and nanotechnology and molecular biology build up, they will come together. Within two or three decades, we will be constructing products and services from the atom up, and the capacity to receive, store, utilize, transform and transmit information will be at the heart of it. The message is simple:

Fasten your seat belts, the turbulence has scarcely begun. We are facing an explosion of societal diversity and complexity hundreds of times greater than we now experience or can yet imagine. If we think to perpetuate the old ways, we should try to recall the last time evolution rang our number and asked consent.

And we're going to manage such a society with the same old, 17th-century mechanistic concepts of organization and management? Not the chance of a snowball in that proverbial hot place. Within a few decades, we will look on our present methods of manufacturing, transportation, finance and organization as quaint relics of an archaic Industrial Age.

To paraphrase T.S. Eliot, we will come full circle to the place from which we set out and see it for the first time. 

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INNOVATION and PRODUCTS in the VANGUARD

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The Latest in Designer Beans

Even those who know Enterprise JavaBeans aren't sure they like them

By Tom Kaneshige

Edited by Howard Baldwin and Tom Kaneshige. What would you like to see in this section? Send your comments and suggestions to et@cio.com.

LOSING CUSTOMERS DAILY, his boss threatening to fire him, Jason Monberg gambled his company's future on Enterprise JavaBeans (EJBs)—a new Java technology. It was the act of a desperate man.

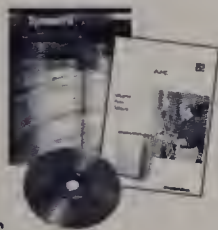
For three months Monberg's computers

crashed repeatedly, unable to handle droves of people visiting and buying products on his Web site. "It was like being pricked by a thousand nails," recalls Monberg, the CTO and co-founder of Sparks.com, a San Francisco-based Web-based gift and greeting card retailer. "My

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BUZZ WORDS

CEO told me that if I didn't get this fixed, I would no longer be part of the company."

Remembering Java's cross-platform promise, Monberg hoped he could boost performance by developing a big Java application and adding reliable Sun servers to his erratic Windows NT servers. He rebuilt Sparks.com's e-commerce engine using EJBs and went live in slightly less than four months. So far the system has held up.

Betting the company's crown jewels on a year-old technology like EJBs sounds a bit outrageous. Most CIOs wouldn't hang their corporate assets on new technology, let alone one built around Java, especially one with so many acknowledged problems. As for Monberg, his short-term reliability problems have been solved, but EJB-related quirks constantly crop up because his in-house programmers are inexperienced with the new technology. EJB's long-term viability is still a question too because Monberg is unsure how it will

BAMs
brick-and-mortar corporations (adding the "A" makes it appropriate for polite conversation)

maintains their privacy. Later this year, Sun plans to release version 2.0 to address stability problems, according to Ann Betser, senior product manager for EJBs at Sun's software products and platforms division.

Software vendors BEA Systems Inc., IBM Corp., Oracle

Corp. and a dozen other smaller companies, including Bluestone Software Inc., GemStone Systems Inc., Novera Software Inc., Persistence Software Inc., Secant Technologies Inc., SilverStream Software Inc. and Valto Systems Inc. began offering products supporting EJBs. Instinet Corp., The Detroit Edison Co. and Visa International have launched projects with the hope of capitalizing on the technology's potential benefits.

EJBs ride the coattails of a hot IT trend: distributed computing, which basically means breaking up an application into workable parts, utilizing a number of servers, one of which may handle the heavy lifting—a.k.a. the business logic—



Betting the company's crown jewels on a year-old technology like EJBs sounds a bit outrageous.

perform as his Web site grows. "We're going to have days with more than a thousand orders and a million page hits, and it's all a little worrisome because you can't predict things on the Web," says Monberg.

EJBs emerged on the developer scene in 1998 when Sun Microsystems Inc. unveiled a specification for creating server-based applications using software components. These components act as preconfigured pieces of code that IT staff no longer have to build from scratch. They can be as simple as an order-entry form or as complicated as a virtual shopping cart that keeps track of where users have been and

of an application, while others perform less-intensive presentation and database functions.

Cashing in on Java's cross-platform promise, CIOs can deploy different servers tuned for certain tasks. The distributed computing model enables CIOs to add servers in the future without having to rewrite a lot of code. All of this underscores EJBs' marketing tenets: fast software development, hardware flexibility and scalability. And while CIOs are taking advantage of all of these capabilities, lingering questions about how much they can rely on EJBs remain.

new products

Masters of Disasters

Legato Systems Inc. has developed **NetWorker Recovery Manager 1.0** to help IT staffers quickly recover from disasters by skipping the labor-intensive and time-consuming recovery phase. Recovery Manager 1.0 collects configuration information from the systems it protects and then copies it to another automated computer system elsewhere on the network. Users can bring a damaged or destroyed server back online with limited downtime. Pricing starts at \$14,375 for one server and includes five bundled clients. For more information, call 650 812-6000 or visit www.legato.com.

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- Peter Nikonowitsch, Engineering Manager, Hitachi Semiconductor



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Fast software development is especially attractive given the demand for rapid delivery of services over the Web. Deploying reusable EJBs rather than writing code from scratch dramatically reduces application development cycles. Instinet, an electronic brokerage company with headquarters in New York City, Europe and Asia, rushed to market an e-brokerage system by building it with EJBs.

Instinet saw swelling enthusiasm over the euro, Europe's single currency intro-

While C++ would have provided a more stable development environment, EJBs offered a more powerful programming model that was easier to integrate with Java clients and customers' systems. If Moseley had to resort to C++ coding, "it would have slowed down our development process considerably," she says. Instinet used EJBs to put together a multimillion-dollar e-brokerage system utilizing Sun Enterprise 10000 servers, an Oracle database and Persistence Software's PowerTier application server, which is priced at \$25,000 per CPU. Even so, it took 12 in-house software engineers a year to build the system.

According to Chris Keene, CEO of Persistence Software in San Mateo, Calif., Instinet's entire system has been benchmarked at more than 1,000 transactions per second. By being the first to deliver bond trading over the Web, he believes Instinet hopes to capture 20 percent of the worldwide bond market in one year. (Moseley would not comment on her company's goals.)

Despite Instinet's investment, most large companies flagged as Enterprise JavaBean champions are only dipping their toes in the water rather than taking the plunge. While market research companies such as Aberdeen Group Inc. and International Data Corp. (a CIO Communications Inc. sister company) predict EJBs will soon become the de facto standard for distributed computing, real-world implementers of emerging technology tell a more cautionary story.

Falling Flat

Credit card giant Visa International began testing EJBs in hopes of integrating them into an existing Java-based application managing access to a global network. The technology failed. "EJBs have been very unstable," says a Visa executive close to the project, speaking on condition of



Most large companies flagged as Enterprise JavaBean champions are only dipping their toes in the water rather than taking the plunge.

duced Jan. 1, 1999, and sought to deliver a global trading solution for fixed-income customers in the same year. "We wanted to establish ourselves as the euro's premier electronic broker while the euro was still fresh in people's minds," says Rachel Moseley, CIO for the Fixed Income group at Instinet. "It's obviously a guess, but I believe we've cut our development time in half using EJBs."

Prior to starting the project, Moseley was concerned about using an unproven technology. She set performance parameters and strict deadlines: If EJBs weren't working adequately at certain junctures during the rollout, then she'd fall back to developing software with the more stable C++ programming language. "As long as we were making checkpoints, I felt comfortable with the risk," she says.

new products

Remote Network Analysis

The news in network monitoring is **Breakout Software's MonitorIT 1.0**, a Web-based remote performance monitoring and analysis package for Windows systems. The software helps administrators respond to data overloads, downtime or equipment failures quickly.

When system and network performance levels approach peak capacity, MonitorIT can either deliver notifications or launch programs that can take corrective action. It tracks hardware, operating systems (Windows 95/98, Windows NT, Windows 2000) and software applications such as Internet Information Server. It provides both real-time and historical reporting and analysis of selected performance data.

An integrated "performance wizard" identifies bottlenecks and recommends strategies for improving performance. The module includes five automated report templates that cover Windows NT Internet Information Server 4.0, TCP/IP and Windows 9x. Prices start at \$595 for a MonitorIT Server and five agent licenses, and \$149 for each additional five-agent license. For more information, call 714 724-5520 or visit www.breakoutsoft.com.



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It's precisely EJBs' questionable ability to run reliably and handle massive transactional spikes that saddles the technology in test labs and pilot projects. Even

than tripled performance. "We've added some features to help scale across servers and have implemented some workload management," he says.

Performance issues aren't the only roadblocks fronting EJBs; not surprisingly, Microsoft Corp. hasn't supported the technology in its products yet and probably won't in the near future. Java's portability feature undermines Microsoft's push to make the world NT, explains Anne Thomas Manes, a senior analyst with research company Patricia Seybold Group in Boston.



Java's portability feature undermines Microsoft's push to make the world NT.

Sparks.com's Monberg, with mounting pressure to deliver a new solution, had doubts about the technology at first. He had talked to other IT folks who had dreadful experiences with IBM WebSphere, an application server supporting EJBs. Basic functions such as installing the server and connecting to the database often went off without a hitch, but more complex jobs encountered problems. For instance, when an Enterprise JavaBean tried to manage multiple simultaneous database queries, the system stalled.

"My biggest concern was that this stuff was just too young or maybe the specification was a little confusing," explains Monberg. "You have to wonder, if IBM can't get it right, maybe no one can." Eventually, Monberg settled on BEA Systems' WebLogic Server, impressed by the San Jose, Calif.-based software vendor's willingness to discuss technical problems.

IBM WebSphere's lackluster performance "was an issue and a huge concern," admits Jeff Reser, product manager for WebSphere at IBM. "There were certain deployment scenarios where Enterprise JavaBean support wasn't quite ready for prime time." Reser insists that the latest version of WebSphere, released in September 1999, will have more

What Microsoft Wants

In addition, Microsoft wants developers to build distributed applications using the Component Object Model (COM) and Distributed Component Object Model (DCOM), which compete with EJBs. Microsoft claims COM and DCOM technologies are in use on over 150 million systems worldwide.

Although COM components provide many of the same benefits as EJBs, there are some significant differences. COM server components can realistically be deployed only on Windows 95 or NT servers, contends Thomas Manes. And COM-based services are generally unavailable to non-Windows machines, she adds.

On the other hand, EJBs supply data to Java-enabled Web browsers; simply put, they speak to the Web's vast ensemble of clients. It's no surprise companies building Internet-related services have emerged as early adopters of EJBs.

Between Sparks.com's enthusiasm and Visa's horrors, other companies are moderating their deployment. Detroit Edison, an electric utility company serving customers since 1903, has built its first extranet application using EJBs. Two hundred suppliers will eventually be networked



new products

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If you're the CIO of a midsize company, you may not have the resources to build a customer relationship management (CRM) system with all the bells and whistles. To address this conundrum, **Purple Solutions Inc.** has built **PurpleCRM** using Microsoft Outlook and Microsoft Exchange. It incorporates eight modules that in a larger enterprise would probably be eight separate applications: contact management, customer management, competitor management, channel management, pipeline management, sales force management and opportunity management. It tracks customers, leads, distributors and sales. PurpleCRM costs \$2,500 per server and \$250 per seat. For more information, call 206 706-1710 or visit www.purpleinc.com.

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through the system. According to Stephen Goldstein, chief IT architect at Detroit Edison, EJBs will allow him to add and modify the application quickly in the future.

However, Goldstein doesn't plan to

deploy EJBs on systems that touch his company's 2 million customers any time soon. "We're reserving judgment for EJBs on the high end," he says, adding that Detroit Edison probably won't be extending the technology to other applications this year.

REVISIT

channel management

Distribution Tribulations

WHAT HAPPENS WHEN an irresistible force like electronic commerce hits an immovable object like a venerable distribution channel? You get a paralyzed CIO who wants to be nimble and cutting edge but can't dismiss an established reseller force. In "Smooth Sailing in the Channel" (*CIO*, June 15, 1998), we looked at a handful of tools that helped CIOs electronically manage their relationships with resellers and distributors.

Recently joining the players mentioned in that article is an odd duck named Asera Inc. (www.asera.com) that straddles two trends: partner relationship management and application service provider. Its eService is designed to let CIOs implement an e-commerce solution and build a virtual community for their channels (whether direct OEM, reseller, distributor or consumer) by adding modular pieces as needed. And Asera charges for it on a pay-as-you-go basis. CIOs can start with modules for catalogs, configuration, order entry and order status, and add message boards, news, research, virtual events and security profiles as needed.

EService starts with the basics: a common Web-based interface, a single sign-on capability (so that users don't have to remember multiple passwords), personalization (so that users see information that's only pertinent to them) and workflow. But that's it. Rather than build everything else from scratch, Asera has contracted with companies like Cisco Systems Inc., Oracle Corp. and Sun Microsystems Inc.; with Active Software Inc. for ERP integration; Aeneid Corp., Interwoven Inc. and iSyndicate Inc. for Web content management; enCommerce Inc. for security; Selectica Inc. for configuration; Participate.com, Talk City Inc. and Well Engaged LLC for community services; and Intel Corp., MCI WorldCom Inc.'s Uunet and Qwest Communications International Inc. for hosting. Asera uses XML to link with legacy systems, whether they're EDI or ERP.

According to Asera, the cost of setting up such a system for a company with revenues of \$500 million is about \$850,000 (\$250,000 to set up the system and \$600,000 for annual usage). Asera hired Benchmarking Partners Inc. to calculate the cost of building and deploying such a system. The number came back: \$5 million to build and \$5 million annually to staff and maintain, according to Asera Vice President of Marketing, Chris Hyrne.

—Howard Baldwin

Goldstein isn't the only one restlessly sitting on the fence when it comes to EJBs. Ian McFarland, senior director of technology at Santa Monica, Calif.-based HSX Holdings Inc. and self-proclaimed Java evangelist, wonders about its future in his own IT architecture.

HSX, creator of Hollywood Stock Exchange, a popular Web-based fantasy trading system designed to lure players into a game of buying and selling "shares" of movies and celebrities, has built its primary application with Java. Moreover, HSX claims that more virtual cash regularly crosses its system than U.S. dollars on the American Stock Exchange.

McFarland gets excited at the prospect of integrating EJBs into his Web application. In addition to all the technical bene-

"We're reserving judgment for EJBs on the high end."

—Stephen Goldstein,
Detroit Edison

fits, he believes the technology would solve his biggest challenge: IS staffing. Finding developers skilled in EJBs would be easier than searching for people with expertise in a single, proprietary product, says McFarland.

Like anyone in charge of a highly transactional application, McFarland worries above all about stability and scalability. He's unsure of the actual transaction volume EJBs can handle. He's wavering about the overall reliability of EJB application servers. Like Monberg, he questions whether Sun's EJB architecture can scale in the future and meet the unpredictable demands of the Internet. "I'm sounding really gung-ho on EJBs," McFarland says. "But it's still very early." His enthusiasm, tempered by reality, is for EJB's promise. ■

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PREDICTIONS **compact projectors**

Light and Lighter

PITY THE POOR SALESPEOPLE, swirling on the leading edge of portable technology. They were probably the first ones in many organizations to use “luggable” computers more than a decade ago, and today, as a result, one of their arms is probably longer than the other. Eventually, portable computers got smaller, but giving presentations on them lost its flair, and the poor schmoes were forced to start dragging LCD projectors with them.

But hurrah, there's hope. Two familiar trends are affecting the projector market, according to Bill Coggsall, president of Pacific Media Associates, a market research company covering the professional large-screen display industry. First, prices of older, heavier projectors have come down about 25 to 30 percent. Second, new projectors started shipping in the second and third quarters of 1999 that drop the typical weight of projectors from 10 pounds to 5 pounds. Coggsall attributes the weight loss to the use of technology from Texas Instruments Inc. called digital light processing (DLP), which does with one chip what older liquid crystal diode (LCD) machines needed three chips to do—that is, project sharp, clear images for presentations.

Lightware Inc., a spinoff of projector manufacturer InFocus Systems Inc., is using single optic LCD technology in its new 5.3-pound machine, Scout, priced at about \$3,000.

Fewer chips means fewer optics, which means less weight. Examples of lighter DLP projectors include Plus Corp. of America's U2-870 SVGA and U2-1080 XGA, neither of which weigh more than 6 pounds (by comparison, recent LCD projectors from Sony Electronics Inc. and Proxima Corp. weigh in at 8.8 pounds and 8.1 pounds, respectively). The cost is significant: \$6,000 for the U2-870 and \$9,000 for the U2-1080.

Coggsall estimates worldwide projector sales will grow from 1 million units this year to 1.5 million in 2003. At the same time, though, industry revenues will jump only from \$4.2 billion to \$5.7 billion. “The growth in sales doesn't quite overcome the price declines,” says Coggsall. “If the manufacturers cut prices further, they could get a swelling of demand that would more than exceed the price drop.”

—Howard Baldwin

new products

Tracking Lease Expenses

If there's one thing Y2K taught us, it's that sometimes we don't know exactly what computer assets we have in inventory. When the assets are leased, inventory tracking can be even more challenging. **Micropath Inc.** has developed **Lease Reconciliation Analysis Service** to help businesses track and manage this hardware by establishing a complete inventory of a company's leased IT assets and respective leasing agreements. In addition to helping companies ensure compliance with their existing leasing agreements and effectively control costs associated with leasing, the service also helps IT keep abreast of the financial ramifications of interim/extended lease payments, property taxes and balance sheet accuracy. The service costs \$70 per hour and ranges from \$15 to \$40 per system. For more information, call 425 702-1887 or visit www.micropath.net.

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Security Across Time & Space

CIOs WANT TO ensure that people dialing into the corporate system are authorized to do so. Typically, CIOs use passwords, encryption and maybe even biometric tools like fingerprint scanners to do this. But what if a company could ensure that no one could dial into the system during certain hours without being at a GPS-certified location at that certain time? The most exciting moments in the

digital world occur when somebody smart lays technology A over technology B and comes up with something that CIOs will actually pay money for. Take security software as technology A. This software enables CIOs to give certain people access to certain files and lock out others.

Then take time-stamping software as technology B. Simply put, this enables CIOs to mark when a specific person up-

dates a file (see "The Notary in the Machine," *CIO*, Aug. 15, 1999). Now put them together: CIOs have the who, what, where and when of security.

It's fitting that a new security product is the result of two companies joining and combining their technologies. Datum Inc., an Irvine, Calif.-based developer of high-performance timing and frequency products, acquired Digital Delivery Inc., the Lexington, Mass., maker of Confidential Courier, a product that guarantees secure delivery of information.

The combination of time-stamping and security technologies is especially relevant now that the boundaries of what passes for the enterprise has expanded to the circumference of the planet. Somebody can steal the CEO's laptop, with his passwords carelessly left on his desktop in a Notepad file. But if said burglar isn't at the GPS coordinates designated as acceptable for the CEO—company headquarters, his house, an occasional Hawaiian resort—he still can't dial into the corporate database and download trade secrets.

This has real consumer applications too. Say a car has a biometric ignition system that's set up to let parents and their teenager drive the car. With such a time-and-space security system in place, the parents could drive it anytime, anywhere, while the engine dies (after sounding an alarm) if the teenager stays out after 10 p.m. or drives beyond the city limits.

That scenario is probably a ways off, but Datum estimates that a security tool combining time, date and place will be available by this summer. In the corporate environment, where mobile workers are uploading and downloading data to handheld computers, the sooner the better.

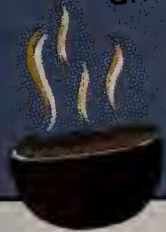
—Howard Baldwin

The most exciting moments in the digital world occur when somebody smart lays technology A over technology B and comes up with something that CIOs will actually pay money for.



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The Social Impact of Technology

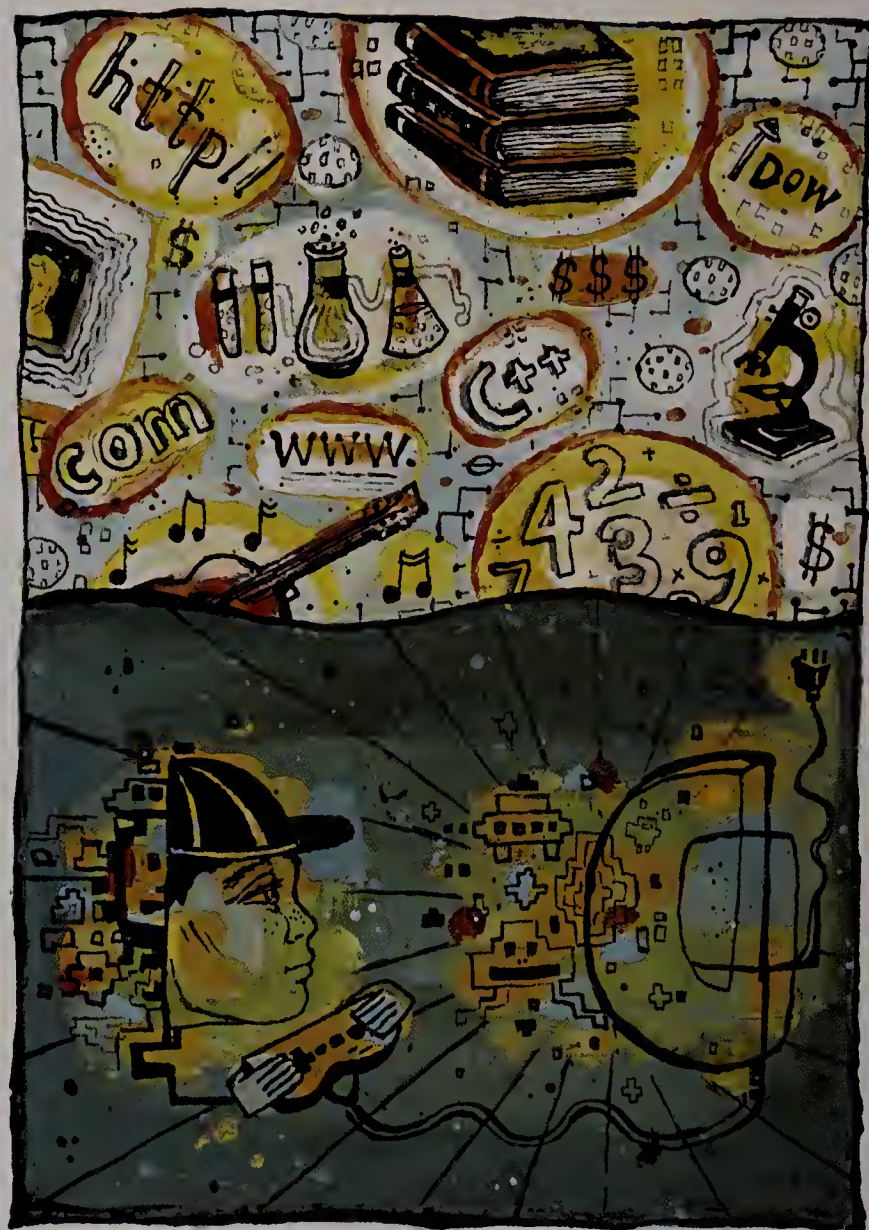
Let's Conquer the Divide

When your grandchildren ask what you did to help end poverty, how will you answer?

BY JARON LANIER

IT'S ALMOST IMPOSSIBLE TO IMAGINE IT innovation without capitalism. The Soviet Union was able to create impressive industries of almost every other type. There were home-grown Soviet cars, pharmaceuticals and power plants, but with few exceptions (like some early experimental military machines) Soviet computers were merely copies of Western designs. And the copies were almost always many years behind the times.

There are undoubtedly many reasons for this particular Soviet failure, and it is hardly the only one. But an apparent explanation is that the Soviet mind-set was focused on linear, zero-sum thinking. Their designers worried about how to



make things efficient, how to allocate resources and so forth. They demanded a nice frame around each design problem—constraints to be solved.

The rejection of precisely that kind of thinking is practically a religion in Silicon Valley and related environs. You simply cannot make new information systems that way. An information system designer is actually doing what the original Soviets claimed to be doing—inventing radically new ways

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Information designers spin spectacular new wealth out of imagination—a rejection of linear thinking. There is a problem in this pretty picture, however.

The economic boom times enjoyed lately by the United States, thanks largely to the triumphs of information systems designers, have been egregiously lopsided. The gulf between wealth and poverty is becoming wider and more dangerous. Indeed, according to the Bureau of the Census, nearly 50 percent of the nation's wealth is now held by the richest 20 percent of the population, an increase of about 4 percent over the last 52 years. In contrast, 40 percent of the population has experienced a decrease in their share over the same time period. The old linear problem of allocation between rich and poor hasn't been made obsolete by our nonlinear explosions of riches. Furthermore, poverty is not just a matter of outward style in the United States. I wish it were. In fact, it shortens health and life, destroys families and kills hope.

Future generations are going to judge us by whether we can rise to meet the challenges of Information Age poverty. There are no excuses. America is in an undisputed leadership position on the world stage, and there is no question that our wealth abounds. We believe that capitalism is not a zero-sum game, that wealth begets more wealth. Therefore, moral imperatives aside, it should be in all our interests to find a way to alleviate the suffering of those who haven't yet benefited from the boom times.

So, what to do? First, understand the nature of the problem. Access to information technology is central to wealth creation in the new knowledge economy; those who are frozen out of

Admittedly, PCs come with more goodies, like mass storage, but even so, there is a striking disparity. What determines economic access to technology is not the inherent cost of the technology's parts, but the commerce model. The bottom line is that poor kids are learning how to be high-tech consumers without learning how to be high-tech earners.

I don't think there is a silver bullet that will solve this problem, but I believe a connected campaign of government, industry and community initiatives can vastly improve the situation. These approaches need to focus on kids and families. Here are some specific things your company can do now to improve the prospects for disadvantaged kids:

- One of the most promising trends in technology is the opening up of video game machine architectures. If kids can connect to the Net with cheap machines and create their own content and services, they will grow into a new generation of empowered, productive, technically skilled citizens, even if they have to endure crummy schools and bad neighborhoods. Unfortunately, this trend is not well enough established. If you work with a company in the video game business, please consider advocating open architectures. Include a modem. Create wonderful authoring tools so that kids can build their own content additions on top of your titles. Allow open Web access.

- Connectivity is central if kids are to be empowered by digital technology. Some schools that have PCs tend to do stupid things with them. This is in part because of the antiquated textbook industry, which sees itself as purely a content provider rather than a tool provider. It's also unavoidably the case that the adults who run the schools are from older generations and don't understand the new economy. Once the computers in a school are online, the kids have a chance to use them well, even if the school system installs only inadequate software on its own (and believe me, that is what schools tend to do).

John Gage, director of the Science Office at Sun Microsystems Inc., has spearheaded a successful approach to solving this problem by organizing NetDay, a volunteer effort to wire schools for the Internet (see www.netday.org). [Gary Beach, publisher of *CIO*, is on NetDay's Board of Directors.] This was a job that government would have gotten around to eventually, but much too slowly to matter to a generation of kids. You can participate in NetDay. Find out if there are disadvantaged schools in your area

The bottom line is that poor kids are learning how to be high-tech consumers without learning how to be high-tech earners.

it will not become significant earners. But the problem is not precisely that poor Americans do not have access to information technology. They do—it's just that they are accessing the wrong technology.

There are, sadly, many children in the United States who receive inadequate health care, education and even nutrition, and yet, ironically, some form of access to television and video games is virtually universal. A typical current video game system is actually more powerful than the average current personal computer and yet costs perhaps one-tenth as much.

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■ Kids need to be motivated to become producers and not just consumers. The most powerful effort in that direction is ThinkQuest (see www.thinkquest.org), an initiative of Advanced Network & Services Inc., a nonprofit corpora-

the results. The ThinkQuest server is one of the most popular among kids around the world—it gets roughly 20 million hits per week, up to 3.5 million per day. Take a moment to think about this. When kids take their own initiative and become producers of curriculum, curriculum suddenly becomes popular. Some of the entries have been so useful—including a wonderful introduction to C++

programming—that they have reportedly been adopted for training purposes by major corporations. Kids from more than 70 countries enter ThinkQuest each year (since 1996, there have been almost 50,000 students and educators from 100 countries). Participants often work in teams, overcoming differences in

language, culture and socioeconomic status. Your company or organization should be sponsoring ThinkQuest scholarships. Is it?

■ The way adults communicate with kids in order to achieve the goals of education must be revolutionized. A

When kids take their own initiative and become producers of curriculum, curriculum suddenly becomes popular.

tion in Armonk, N.Y. (Advanced Network & Services also funds and houses the Internet2 Central Laboratory.) The ThinkQuest Internet Challenge is a nonprofit competition for scholarships and awards in which youths ages 12 through 19 compete by creating Web-based educational tools and materials. What is astonishing is the quality of

THREE OUT OF FOUR FAIL TO MEET



great example of how to do this is Whyville (see www.whyville.net) from the California Institute of Technology. Whyville teaches kids how to be scientists by doing real experiments instead of reading about what other people did. Kids form a natural community over the Net as they learn to plan and realize goals. Is your company sponsoring efforts like Whyville?

None of the above initiatives are handouts. They're investments that will increase wealth for us all.

The problem with pre-digital industries was that they had only a finite demand for labor. Once a factory produced as much of a product as was in demand, it had no need to produce more. This resulted in pernicious, repeated obsolescence of labor forces as technologies changed, and the resultant unemployment destabilized industrial economies for most of this century.

I'm about to make a comment that might sound sarcastic, but can also be taken at face value: The beauty of the Information Age is that information technology is forever broken and always in need of more human labor to maintain and improve it. There are two reasons for this, one technical and the other cultural. The technical challenges of IT will be all

too familiar to readers of this magazine. But even if IT someday becomes easy to manage (as a computer scientist, all I can say is, "Don't hold your breath"), the cultural factor alone will be enough to drive an economy that fully employs a boundless number of educated workers. The reason for this is that all things digital are ultimately made of human meaning, a substance that can be endlessly improved with further effort.

The challenge now is to knock down the barriers that keep some people out of the new economy. The barriers are composed mostly of momentum, a collective entrapment in bad old habits and a lack of faith. If any group of people in the world has enough optimism, skill, energy and faith to address this challenge, it is the pioneers at the leading edge of the information economy. Someday your grandchildren will ask what you did to help mankind end poverty. What will your answer be? **CIO**

Jaron Lanier is the lead scientist of the National Tele-Immersion Initiative, Internet2 Central Laboratory, in Armonk, N.Y. His Web site is www.advanced.org/jaron. How can CIOs make a difference? Tell us what you think at difference@cio.com.



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Opinion | CIO Confidential

Only the Names Have Been Changed

Moving Up, Selling Out

BY ANONYMOUS

THERE ARE DAYS WHEN I'd do this job for free and others when I'm sure they're not paying me enough. There are days when I feel like Superman, convinced that I'm the only thing standing between my company's success and its certain destruction, and days when I feel like a sellout.

As I write this, sales reps from a large software company are sitting in my conference room waiting to see me. From here it looks like there's eight or nine, all sporting gang colors (dark suit, white shirt, bad tie), arranged around the table in proper pecking order and warming up their best Willie Loman impersonations. The empty seat, the one they want me to sit in, is next to the most senior guy. The Jimmy Swaggart hair is always a dead giveaway.

Can you guess what kind of day I'm having? I knew you could.

One morning you wake up and realize that being promoted up the ranks of an information technology organization, while doing great things for your bank account, has the effect of moving you further and further from the things that attracted you to the profession in the first place (programming in my case),

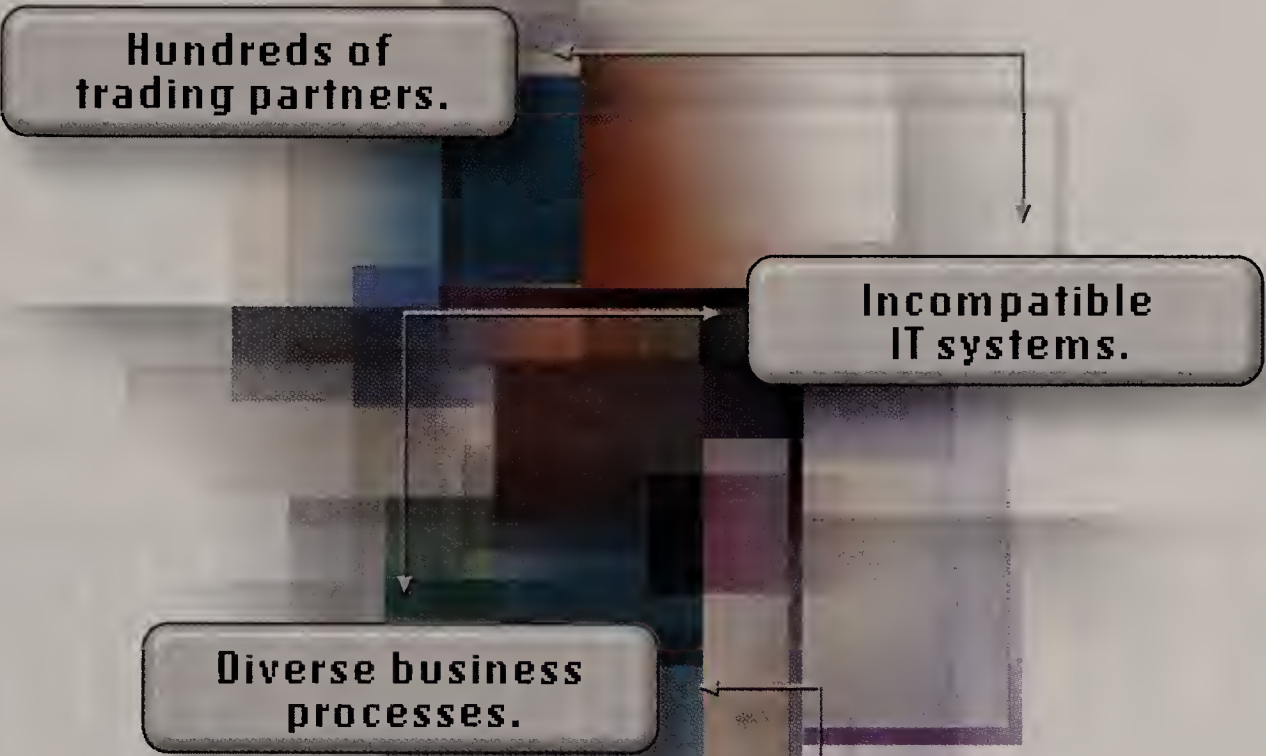
just so the God of Promotions might eventually reveal to the world the precise point on the ladder where you suddenly become a complete incompetent.

What seemed at the beginning of my career to be a very purposeful, straightforward, somewhat ordinary job as a craftsman somehow morphed into a weird amalgam of administrator, strategist, bureaucrat, referee and all-seeing oracle with the life span of a mayfly and the most confusing possible array of customers and masters to answer to.

In 25 years, I've worked for four major companies and have always been associated in one way or another with the information technology department. In 12 years as a chief information officer, I've interacted with perhaps 200 CIOs from companies ranging widely in size and industry. In all that time, across all those IT departments, there is one bit of conventional wisdom so universal it has almost achieved "law of



ILLUSTRATION BY CHRIS SHARP



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nature” status. Every CIO knows, in the deepest recesses of his or her dread-ridden subconscious, that internal customers, the users of their systems, are generally dissatisfied with IT’s performance and unsure about their organization’s ability to deliver. They’re also well aware that IT consistently ranks as one of the least admired corporate functions.

How is it possible, I wonder, that I have never come across an exception to this rule?

and reliability of a Swiss watch. Unfortunately for CIOs, most companies completely misunderstand the creative process needed to establish profound and long-lasting competitive differentiation. And ERP is nothing compared with the next great silver bullet—software in support of knowledge management. This gem is currently being marketed as the be-all and end-all to “empower” employees by making available—at the simple touch of a button—performance standards and processes

The endless barrage from the dark legions of “solution providers” is meant to accomplish one thing: shake my company’s confidence in my department’s ability to plan and perform by ratcheting up expectations beyond anyone’s capability to deliver.

I’m beginning to suspect that one of the reasons is sitting in my conference room. A few days ago, this bunch sent me a stack of printed material including a copy of an advertisement they’ve been running in one magazine or another. It reads:

“Unlock IT’s Potential to Propel Your Business into the 21st Century.”

Nobody will ever accuse these guys of being subtle. What other discipline is subjected to this kind of constant bombardment from as many well-oiled marketing machines all delivering the same message?

“Your IT organization isn’t living up to its potential, but hire us or buy our product and we’ll straighten them out for you. We can help your information technology department win the rat race!”

One life lesson CIOs learn pretty early is that in this particular rat race, even if you’re lucky enough to win, you’re still a rat! Why doesn’t Keane run an ad that says “We Get Bean Counting Done” just once and give us all a break?

This is wealth creation through the marketing of vaporware and repackaged versions of last year’s failed hocus-pocus. The endless barrage from the dark legions of “solution providers” is meant to accomplish one thing: shake my company’s confidence in my department’s ability to plan and perform by ratcheting up expectations beyond anyone’s capability to deliver. Damn their black hearts. Combine this with the phenomenon known as corporate herd mentality, and we’re all condemned to ride wave after wave of never-ending, overhyped “solution cycles,” in which motion is viewed as action and consultants’ astronomic hourly rates are seen as proof of expertise.

Enterprise resource planning, or ERP, is the most recent “wave” appealing to companies sold on the notion that IT should produce truly innovative solutions with the regularity

deemed best-of-class or best practices. While it sounds great in theory, knowledge management isn’t about empowering people at all, and it certainly isn’t about innovation. It is, in fact, nothing more than a very expensive and particularly blunt weapon in the struggle to enforce employee compliance with organizational norms.

Guess who’ll get blamed for this one after the revolution? Here’s a hint: Not the CFO or the CEO.

The conference room door is open, and I can tell they’re getting restless. I wonder if my administrative assistant would be willing to help me fake my own death. I don’t need to meet with these guys; I know what they want. Today is the day they introduce me to my new “account executive.” Too bad. I’m sure we’re not nearly as angry and frustrated with our current AE as we would be if he’d hung around a few more months. But that, after all, is the point of this constant shuffling, isn’t it? Software companies know they can never leave a salesman in an account so long that he might have to answer for the promises his company never intended to keep or, perhaps, never even knew about. Communication from these guys is an adventure where great delivery and flashy multimedia backfill for accurate, candid content. They deftly skirt the real issues by falling back on a lexicon of euphemisms and soothing gobbledygook to filter every last bit of useful information that might be in any way construed as negative. They’re not looking to sell me anything (as if there was something wrong with wanting to sell me something); they’re looking for a “partnering opportunity!”

There, but for the grace of God...

Here’s a joke that’s been circulating around my office. Labs testing medicines and other consumer products like cosmetics have forsaken the use of animals in favor of using software

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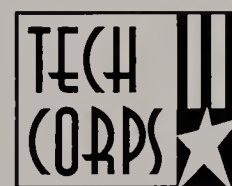
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salesmen. The change has had two effects: It's gotten the animal-rights activists off their backs, and technicians have become less emotionally attached to their test subjects.

Still, you have to give these guys their due. As hard as my job is sometimes, it's difficult to conceive of anything harder than selling software. Imagine making your living selling broken stuff, code with more bugs than a cathouse mattress. Or having to routinely promise features that don't yet and may never exist, a practice known as "overhanging the market," at astronomical prices that inexplicably drop like a bad habit the last week of every quarter and then just as mysteriously rise again.

Only a bunch of nincompoops would actually let them get away with this nonsense! CIOs have accepted and internalized this incompetence and dishonesty as "just the way it is." Even worse, these same vendors have bullied us into thinking that any problems are our own fault.

Microsoft, SAP, Oracle and the rest of the software industry have, through their architecture and arrogance, built themselves (and us, unfortunately) into a corner we may never be

able to get out of. This is an industry ripe for disruption by the first company that offers bug-free software and has the integrity to sell only what it can deliver. Let's hope that company appears sooner rather than later, and when it does, let's

The conference room door is open, and I can tell they're getting restless. I wonder if my administrative assistant would be willing to help me fake my own death.

promise one another to reward it handsomely.

Well, it's time to put my game face on and get this meeting over with. I wonder if I could get up the nerve to pull the fire alarm? **CIO**

Anonymous has been a CIO for over 12 years at household-name companies in various industries. He'd love to hear from you at confidential@cio.com.

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Opinion | Face Off

Two Sides To Every Question

Has Y2K Helped the CIO's Credibility?

HOWARD A. RUBIN

META GROUP
RESEARCH
FELLOW
POUND RIDGE, N.Y.

no

The CIO: IT's Rodney Dangerfield

The Y2K problem has presented the world's IT organizations with the largest single challenge they have ever faced. Virtually all have risen to the occasion, mastering the complexities of program management, performing Herculean remediation tasks and setting Olympic records for testing, conversion and implementation.

But, are these efforts enough to reverse IT's Rodney Dangerfield syndrome of "We don't get no respect?" I don't think so.

The Y2K distraction has occurred at the worst possible time for IT credibility. We are at a point in time where two forces—business and technology—have come together. Where was IT when this was going on? Dealing with Y2K to the tune of 25 percent or more of IT spending. IT has been preoccupied with Y2K, and business units have risen to the occasion by managing and funding their technology initiatives directly. This has accelerated business taking control of enterprise strategic technology initiatives. Where technology was once a prescription "drug" with the CIO as the pharmacist, it is now available over-the-counter and the business community knows this.

The latest Rubin Systems/Cap Gemini Y2K survey found that, in 1999, 45 percent of strategic projects were under direct business control versus 37 percent in 1998. This number is projected to grow to more than 50 percent by the end of 2000.

Business leaders view Y2K as a problem created in the past. While the CIO conquered a past that he or she created, the money for new armaments in the competitive space has been awarded to the new corporate "hero"—the business technologist who rose to meet the challenge of the new wave economy. Although the CIO may be given the medal of honor, the business generals have unwittingly pulled off a coup. They've got the money, they've got the control. ■

yes

BRUCE WHITMAN

SENIOR VICE
PRESIDENT
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EDISON, N.J.

The CIO: Unsung Hero of the Millennium—and Beyond

It's after the New Year. We're sitting back, relaxed. Of course, there have been some unavoidable, minor disruptions in noncritical services, but the power grid is working, the telephone system is functional and the water supply is clean. Who should we thank for this? CIOs everywhere.

In some leading-edge companies, CIOs raised the flag and gained management support as early as the late '80s and early '90s. However, even after the initial awareness of the problem, many CEOs and CFOs ignored the issue until the government admitted concern in 1997. CIOs were aware of the Y2K problem early and struggled to bring critical awareness to the boardroom.

Over the last decade, an amazing thing happened. CIOs everywhere championed the campaign for Y2K remediation. Companies scrambled to identify assets and review thousands of programs and applications. Millions of lines of code were tested, repaired and enhanced at every major corporation.

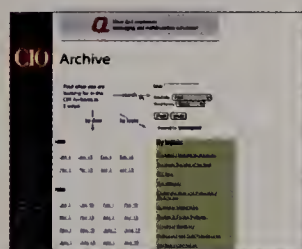
But even while American industries invested nearly \$250 billion in the Y2K problem, business grew. In the last decade, worker productivity has gone through the roof. The reason is technology. And who managed the technology? The CIO. While in the midst of the Y2K project, CIOs had the confidence, vision and forethought to provide the support mechanism to fuel that growth. As a result, companies are now better positioned to recognize the benefits of the newest technologies and open the doors for success in the new millennium.

In the first month of the year 2000, as evening draws near, and we turn on the light, sip a glass of water and dial up the next call offering best wishes for the New Year, who should we thank? It's the CIOs and their dedicated IS staffs who are the unsung heroes of the millennium. CIOs have brought us over the threshold of crisis and enabled a whole new millennium of business opportunities. Cheers. ■

Which side of the debate are you on? Visit comment.cio.com and make your thoughts known. Send column ideas to faceoff@cio.com. Edited by Daintry Duffy.

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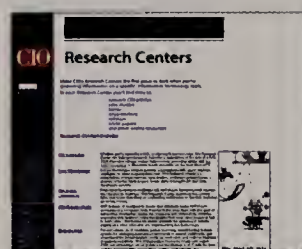
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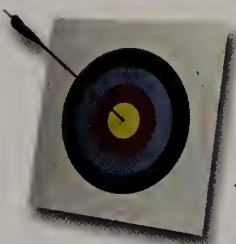
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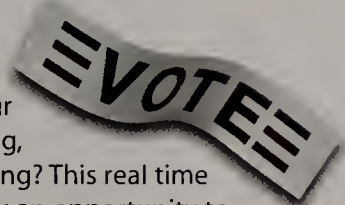
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Opinion | From the Publisher

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Come Together

WASHINGTON, D.C., IS A TOWN OF POWER. And of associations. According to the D.C.-based American Society of Association Executives, more than 135,000 associations exist in the United States—many of them with headquarters and offices in our nation's capital.

Senior Editor Tom Field reviews the landscape of technology associations in his story "The Influence Peddlers" (Page 88). These organizations are well-oiled machines that promote vendor-driven technology issues to Congress.

But the voice of the CIO is not being heard.

In early 1999, the technology vendor community was becoming increasingly concerned about post-Y2K litigation. Would users sue technology companies for possible losses attributed to Y2K problems? The tech associations took up this fight—against no opposition from CIOs or users—and helped shape and pass the 1999 Y2K Act, which put a per-user cap on Y2K damages. Some in the user community said this cap gave vendors no incentive to earnestly try to fix Y2K problems.

Chief information officers should have been major players in this debate. But they weren't.

And they were equally absent in the congressional debate on immigrant workers. H-1B is a temporary visa that allows foreigners with specialized skills to work in the United States. As we all know, there is an IT labor crunch in the market, and the technology associations stepped into this battle to lead the



Gary J. Beach

fight. At first glance, their position in favor of increasing the amount of foreign workers allowed into the United States would seem beneficial to CIOs. But this bill was nearly defeated by foes who framed it solely as a scheme by technology companies to hire foreign workers at lower salaries. If a strong CIO association had joined hand in hand with the technology groups, this bill would have sailed through Congress.

Which leads to this call to action.

I am calling for the formation of CIONet, a trade association of chief information officers. The association would be headquartered in Washington, D.C., and its mission would be to make sure issues of importance to CIOs are heard and acted on in the halls of Congress.

There would be two levels of membership in CIONet. Full members would be chief information officers of any size company who contribute annual dues of \$1,000 to the association. Full members must have the title of chief information officer on their business card. Any technology vendor that contributes \$10,000 annually to CIONet could be an associate member of the association.

Full members would elect a president and a board of directors. The association would hold an annual conference to set the agenda for CIOs in the coming year. That conference would be held each year the day before the president's State of the Union address. Associate members could exhibit at the conference.

So, what do you say? Should we start CIONet? Are you willing to join? Drop me an e-mail at gbeach@cio.com and let's get moving. Time's a wasting!

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